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RELATION OF AMERICAN DIETARY TO DEGENERATIVE DISEASE*

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SAN FRANCISCO

In the last two decades there has been a steady growth of interest in the relation of diet to health and disease. Directed primarily toward the proper amounts of protein, fat and carbohydrate, the adequacy of the different proteins and the balance of the various mineral elements, this interest has turned latterly toward the vitamins and the group of so-called protective foods that are rich in vitamin. The commonest of these are eggs, milk, fruit, vegetables and lettuce. The vitamins that they contain so abundantly have been shown by animal experiments to be necessary for growth, reproduction and the prevention of the frank deficiency diseases. But under ordinary conditions of living deficiency diseases rarely occur and it has been generally considered that the average diet provides an adequate supply of vitamins.

The facts brought out by various investigations have nevertheless afforded a basis for appraisal of the American dietary. This has been shown to be low in vitamin and residue, high in calories, in carbohydrate and in its ratio of acid to alkaline ash forming foods. It has been pointed out that certain primitive peoples are relatively free from many of our chronic diseases; that the introduction of the white man's food has meant the introduction of the white man's diseases. The implication was that a close relation doubtless existed between our food and our disease. But dietary habits are so fixed and the economic premium on nonperishable foods so high that this suggestion has left our national consciousness unaffected.

For several years I have been struck by the remarkable improvements shown by certain diseases on a diet high in protective foods. The group included hypertension, myocardial degeneration, arteriosclerosis, arthritis, chronic gastro-intestinal disease, diabetes and an occasional unexplained headache. These diseases are of unknown origin and of the chronic degenerative type. General tissue changes accompanying them indicated that the background for their development had been prepared by some longstanding deteriorating influence. The improvement on change in diet suggested that this deteriorating influence was possibly a deficiency in these vitamin-containing fresh foods. It seemed important to determine whether a relationship could be established between these diseases and the type of food previously eaten. On this account I have obtained as a part of the history of each patient a statement of the amount and kind of food taken at each meal. Because of the general similarity of most meals, it has been possible to tabulate these diets so as to show roughly the number of calories derived from each kind of food, and to estimate the percentage of the total calories derived from the group of protective foods. The present paper is based on a study of 501 of these dietary histories.

There are several limitations to the accuracy of this method of study. The first arises from the difficulty in obtaining the desired information from the patient. Some respond well to the necessity of making a straightforward statement, while others are ambiguous and full of alternatives or unable to give any definite information at all. The statement that lunch consists of whatever is left over from the night before or that the evening meal is a regular dinner may be quite literally true but is of little value in the matter at hand. The second limitation to accuracy arises from the necessity of assigning an arbitrary caloric value to each portion of food. This arbitrary value is obviously a mere average between wide extremes formed by individual ideas of what constitutes a portion of any food. The third limitation arises from the necessity of separating all foods into two rigid classes. Many foods must be classed as nonprotective though they contain some vitamin: others must be classed as protective though padded with less desirable nonprotective foods. But the object of this study has been to determine only the relative percentage of the total calories available from eggs, milk, fresh cooked vegetables, fresh fruit and lettuce, and the values assigned are sufficiently accurate for this purpose. Butter and cream, though rich in vitamin A, are not classed here as protective foods because experience has shown that their high fat concentration makes them less desirable than whole milk.

Inspection of the diets showed that the items found in most of them could be included in a list of thirty-five foods. These are found in table 1. The caloric value of the average portion of each was taken from standard sources. These values are supplemented in certain cases with values for accessory foods usually taken with the main article, such as cream and sugar with cereal, or butter with eggs or potato.

The tabulation of these diets, presenting as it does a cross-section of American food habits, affords an opportunity for determining roughly the percentage values for the various common foods. These are shown in table 2. Bread, meat, potato, all forms of sweet dessert and the accessory foods butter, cream, sugar and mayonnaise form the bulk of the average diet, actually 79 per cent, but bread and butter were the largest single items, 16 per cent and 17 per cent, respectively. These were also the most frequently used

* Read before the Section on Practice of Medicine at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

foods, bread and butter appearing in all but six diets, meat in all but thirty-one, potato in all but 107, and sweet desserts in all but 128. In point of view of frequency as well as of calories, bread and butter were easily the most important.

The nonprotective foods formed 54 per cent of the average diet, 88 per cent if the accessory foods are included. Bread, butter, meat, potato, and sweet desserts already mentioned as forming the great bulk of the diet appear in this group. For the most part these foods are naturally or artificially concentrated and free from residue, and at least the bread and meat have an acid ash. With the exception of butter and cream, which contain fat soluble A, they are vitamin poor. Another characteristic is their high percentage of available carbohydrate, bread, potato and the sweet desserts being particularly striking in this respect.

TABLE 1.—*Caloric Value of Average Portion of Various Food Items*

Calories in Average Portion *	No. 211	No. 212	No. 213
Egg, 83; butter, 47	2	1	½
Bacon, 3 strips, 246	..	..	½
Fresh fruit, 80; sugar, 41; cream, 108	2	..	1
Canned fruit, 100	..	..	..
Dried fruit, 8; with juice, 200	..	..	..
Citrus fruit, 139; sugar, 20	..	..	..
Coffee	..	2	1
Tea	..	..	..
Cocoa, 279	..	..	..
Chocolate, 285	..	..	..
Milk, 160	..	..	..
Malted milk, 221	..	..	..
Cream, 1 tablespoonful, 54	..	1	..
Canned cream, 1 tablespoonful, 34	..	..	..
Butter, 1 pat, 95	..	2¼	2
Bread, 1 slice, 80	3	4½	4
Cereal, 60; sugar, 41; cream, 108	..	..	..
Potato, medium, baked, 170; butter, 95	..	..	1
Paste, 150	..	..	..
Meat, medium fat, 190	1	1½	1
Fish, white, 130	½	..	..
Fowl with skin and fat, 230	..	½	..
Soup, 75	..	..	..
Salad, 16; mayonnaise, 187	2	..	2
Vegetable, 40; butter, 47	..	1	1
Canned vegetable, 40; butter, 47	..	..	..
Sweet dessert, 300	..	..	1
Pie, 314	..	..	..
Pudding, 220	..	..	..
Cake, 290	..	..	..
Ice cream, 180	..	..	..
Sugar, 1 teaspoonful, 41; 1 lump, 29	..	/9	..
Candy, 1 chocolate, 80	..	..	..
Jam, jelly, marmalade, 100	..	..	..
Beans, canned, 152	..	..	..
Miscellaneous, protective/nonprotective	..	..	..

* Miscellaneous items given in calories instead of portions.

The protective foods formed 12 per cent of the average diet. The percentage figures in chart 1 show a wide variation between 0 and 42 per cent, though the curve representing the number of cases at each percentage of protective food reaches its peak near the lower extreme at 6 per cent (chart 1). Only sixteen diets showed 30 per cent or more of protective food, milk being nearly always responsible for these high figures. In spite of this poor showing from the point of view of calories, one of the protective foods, vegetable, followed meat in frequency of use and appeared in all but thirty-six diets.

The facts thus far elicited seem to support the current criticism that the American dietary [1] contains a large proportion of concentrated food high in carbohydrate and acid minerals, low in vitamin, residue and alkaline minerals.

But the object of this study was to determine whether a relationship could be established between certain degenerative diseases and the type of food previously eaten by the patient. The percentage incidence of these diseases was therefore plotted against the percentage of protective foods as in chart 2. The resulting curve shows a decrease in the percentage incidence of degenerative disease with increase in the percentage of protective food. In this group of 501 cases, hypertension, myocardial degeneration, arteriosclerosis, arthritis, chronic gastro-intestinal disease, diabetes and unexplained headache therefore appeared more frequently when the previous diet had contained only small amounts of the protective foods.

1. A discussion of this whole problem is given by McCollum and Simonds: The Newer Knowledge of Nutrition, New York, Macmillan Company, 1925.

TABLE 2.—*Percentage Values for Various Foods in the Average Diet of 2,224 Calories*

Foods	Protective	Nonprotective	Accessory Foods: Butter	Cream	Sugar	Mayonnaise
Eggs	2.9	...	1.6	...	...	...
Bacon	...	1.7	...	...	...	...
Fruit, fresh	2.4	...	...	3.2	1.2	...
Fruit, canned	...	0.4	...	...	...	...
Fruit, dried	...	0.2	...	...	...	...
Grapefruit	0.1	...	...	...	...	...
Cocoa	...	0.4	...	...	...	...
Chocolate	...	0.5	...	...	...	...
Milk	2.9	...	...	...	...	...
Malted milk	...	0.4	...	...	...	...
Cream	...	...	...	1.5	...	...
Canned cream	...	0.1	...	...	...	...
Bread	...	16.1	9.1	...	...	...
Cereal	...	0.7	...	1.2	0.5	...
Potato	...	6.9	3.9	...	...	...
Paste	...	0.3	...	...	...	...
Meat	...	10.9	...	...	...	...
Fish	...	0.5	...	...	...	...
Chicken	...	0.2	...	...	...	...
Soup	...	1.2	...	...	...	...
Salad	0.6	...	...	...	...	6.6
Vegetables, fresh	2.4	...	2.8	...	...	...
Vegetables, canned	...	0.2	0.2	...	...	...
Sweet dessert	...	3.7	...	...	...	...
Pie	...	2.7	...	...	...	...
Pudding	...	1.4	...	...	...	...
Cake	...	2.9	...	...	...	...
Ice cream	...	0.3	...	...	...	...
Sugar (tea, coffee, stewed fruit)	...	...	...	...	2.4	...
Candy	...	0.4	...	...	...	...
Jam, jelly, marmalade	...	0.3	...	...	...	...
Beans	...	0.05	...	...	...	...
Miscellaneous	0.8	...	...	...	...	...
	12.1	53.9	17.7	5.9	4.1	6.6

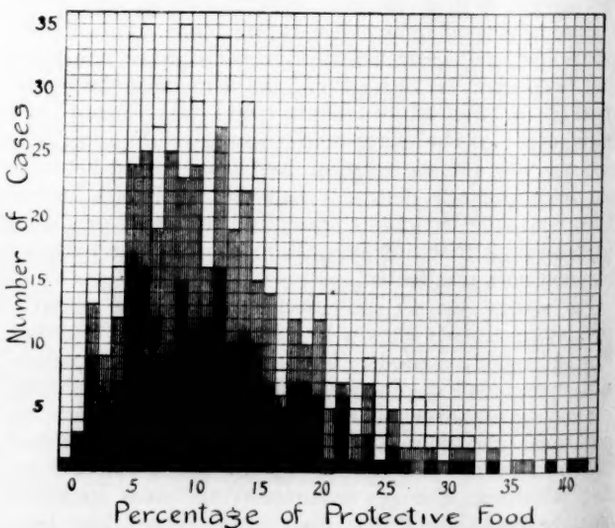

Chart 1.—Protective foods: white blocks, total number of cases; shaded blocks, number of patients more than 30 years of age; black blocks, number of cases of degenerative disease.

Reference has already been made to general tissue changes which often accompany degenerative disease and seem to indicate that some fundamental influence is bringing on a gradual premature deterioration of all

body tissues. These tissue changes involve the skin, subcutaneous tissue, sclerae and visible mucous membranes and may appear without other external evidence of serious visceral or joint disease. They seem

TABLE 3.—*Corrective Diet*

Food Items	Calories in Protective Foods	Calories in Nonprotective Foods
Breakfast		
Glass of orange juice	100	...
Two eggs	166	...
Fresh fruit	80	...
Glass of milk	160	...
Luncheon		
One third head of lettuce	16	...
One tablespoonful of oil	...	93
Two fresh vegetables	80	...
One pat of butter	...	95
Two glasses of milk	332	...
Fresh fruit	80	...
Dinner		
Meat	...	190
One third head of lettuce	16	...
One tablespoonful of oil	...	93
Two fresh vegetables	80	...
One pat of butter	...	95
One glass of milk	160	...
Fresh fruit	80	...
Cheese	...	91
Handful of nuts	140	...
Totals	1,490	657
Total calories	2,147	
Percentage of protective foods, 70		

definitely connected with low percentages of protective food but particularly with large amounts of bread. The patient often has a protruding abdomen and is overweight. His skin is sallow, coarse and thick, sometimes dry and scaly. In middle life his face may appear congested or present multitudes of tiny dilated venules over the cheeks, nose and ears. His subcutaneous tissues are firm till atrophy of the skin sets in. His sclerae are a bluish gray and often congested. His tongue is a dull bluish or grayish pink and often furred. This picture appears most characteristically in the broad, strongly built, short waisted individual and is often supplemented by complaint of a feeling of heaviness or torpor and of slight achy pains "as though the body were being poisoned."

The evidence thus far submitted suggests but does not establish definitely a cause and effect relationship between low percentages of protective foods and degenerative disease. It could be made more convincing by demonstrating that the visceral, joint and superficial degenerative processes were susceptible of modification by a corrective diet high in protective foods. Such a diet should contain eggs, meat, a quart of milk, and a liberal allowance of lettuce, fresh cooked vegetables and fruit. It has been possible to combine these elements in acceptable form so as to supply a total number of about 2,000 calories, of which 70 per cent were provided by protective food and a minimum by nonprotective foods. The diet (table 3), with occasional slight modifications, has been prescribed for the greater number of the 501 patients whose dietary histories are given here. Of these, forty-four with chronic circulatory disease, seventy-five with chronic joint disease, fifty-five with chronic gastro-intestinal disease and ten with unexplained headache were observed for periods of time varying from several weeks to several years, so that some judgment could be made of the effects of the corrective diet on the degenerative processes. The other forms of treatment which at times supplemented this diet are indicated in table 4. While they make the experiment a little less convincing, they in themselves are known to have only occasional corrective influence on the degenerative disease and cannot be considered as destroying the evidence afforded by the change in diet.

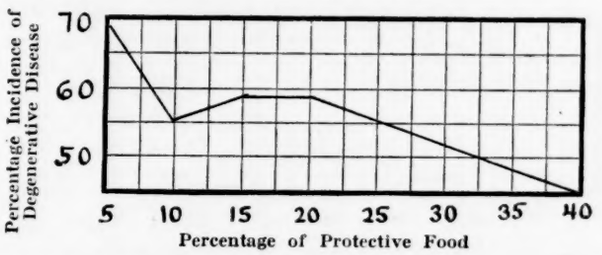

Chart 2.—Relationship between the percentage of protective food in the previous diet and the percentage incidence of chronic circulatory disease, chronic arthritis, chronic gastro-intestinal disease, migraine and diabetes in persons over 30. There were:

43, or 69%, of 62 cases between 0 and 5%
64, or 55%, of 117 cases between 5 and 10%
58, or 59%, of 98 cases between 10 and 15%
32, or 59%, of 54 cases between 15 and 20%
24, or 45%, of 44 cases between 20 and 40%

The forty-four patients with chronic circulatory disease included thirty-five with hypertension, four with myocardial degeneration (not accompanied by hypertension), four with heart pain and one with intermittent claudication. The effect of the corrective diet on these patients is shown in table 5. In hypertension, 74 per cent of the patients were much improved or completely relieved of all symptoms. The records are incomplete with respect to blood pressure observations after the first visit, but in twenty-three patients in whom subsequent observations were made eighteen showed an average fall of 31 mm. of mercury as against five who did not show any change. This rather striking drop in blood pressure was not as significant as might appear: it occurred independently of relief from distressing symptoms, in one case without any relief at all. The general improvement is attributed to reduction of the cardiac load afforded by the smaller number of calories in the diet and by the considerable loss in weight. The former operates by cutting down the amount of heat that must be carried to the periphery of the body for elimination, the latter by diminishing the total load that must be carried about. But ar...

TABLE 4.—*Method of Summarizing Results from Table 1: Additional Brief Clinical Notes*

Number	File Number	Sex	Age	Calories from Protective Foods	Balance of Calories	Total Calories	Per Cent of Calories from Protective Foods	Diagnosis	Treatment	Period of Observation	Results
211	1474	M	68	358	1,214	1,572	23	Syphilis; myocardial degeneration; hypertension	Fresh foods, salt free; ultraviolet; thyroid mercury	2 yr.	Much improved
212	1476	M	57	123	1,491	1,614	8	Degenerative arthritis	Fresh foods	2 wk.	Complete relief
213	1477	F	50	194	2,002	2,196	9	Nervousness; hypertension	0	0	0

increase in alertness and sense of well being, together with improvement in the functions of the alimentary tract and in the color of the skin sclerae and visible mucous membranes suggests that a more fundamental change has taken place in all the tissues and that the muscle and vessels of the heart have to a certain extent

TABLE 5.—*Degree of Improvement in Chronic Circulatory Disease*

	No Change	Slight Improvement	Much Improved	Complete Relief	Total
Hypertension	1,279 1,565 1,671 1,702 1,821	1,280 1,347 1,371 1,814	1,144 1,207 1,366 1,387 1,406 1,422 1,424 1,474 1,546 1,567 1,636 1,646 1,691 1,713	1,164 1,165 1,195 1,240 1,250 1,335 1,437 1,608 1,706 1,708 1,768 1,832	
	5	4	14	12	35
Myocardial degeneration	1,640	1,462 1,782	1,745		
	1	2	1		4
Heart pain	.....	.....	1,636	1,165 1,754 1,822	
			1	3	4
Intermittent claudication	.....	1,345			
		1			1
Totals					44

participated in this change. This seems the more likely in view of the improvement shown in table 5 by the four patients who complained of heart pain, in each case so severe and arresting as seriously to interfere with activity. In two of these patients the cessation of pain may have been due to relief of the accompanying hypertension, but in the other two in whom hypertension was not a factor it must have been due to changes in the muscle and blood vessels of the heart. One of the latter patients was a boy, aged 21, whose relief from pain began just four days after beginning the corrective diet. In the four cases of myocardial degeneration and the one of intermittent claudication, structural injury had evidently reached a point at which regression of the process was no longer possible.

The seventy-five cases of arthritis included sixty-five of degenerative arthritis, eight of proliferative arthritis and two of infectious arthritis. The first type is so common as to be almost usual in middle life. Many of the sixty-five cases presented only early changes manifested by tenderness and aching of the joints. The second type is uncommon, occurs often in younger persons, represents a more profound disturbance of the metabolic processes with enlarged spindle shaped joints, and is less easily modified by treatment. The third type is often less severe than the second with less general evidence of deterioration and may involve only one or two joints without obvious superficial pathologic changes.

The different therapeutic problems presented by each of these types offers a wide field for discussion but may be summarized in the brief statement that food plays a predominant part in degenerative arthritis while in proliferative arthritis it must be supplemented by long and intensive sun treatment and in infectious arthritis by elimination of foci of infection. This statement is supported by the evidence presented in table 6, which shows that 74 per cent of the patients with degenerative or proliferative arthritis were much improved or completely relieved. Here, as in hypertension, loss in weight may have been a factor in relieving degenerative arthritis of the lower extremities, but general improvement in the functions of the alimentary tract and circulatory systems, as well as objective changes in the superficial tissues, suggested that the improvement was more likely due to the quality of the food.

The fifty-five cases of chronic gastro-intestinal disease included a great variety of types, but all the patients complained of indigestion. In most a careful investigation failed to reveal a specific lesion that might have caused it. The common symptoms of constipation, lower abdominal pain due to gas, belching, heartburn, epigastric distress or slight pain and bloating after meals, indicated the participation of the entire alimentary tract in this symptom complex. The evidence in table 7 shows that 67 per cent of the patients were much improved or completely relieved of all these symptoms. It strongly suggests that indigestion is due to a general pathologic process which extends throughout the tract and is caused by insufficient protective food. But some

TABLE 6.—*Degree of Improvement in Chronic Arthritis*

	No Change	Slight Improvement	Much Improved	Complete Relief	Total
Degenerative arthritis	1,237 1,321 1,439 1,562 1,675 1,760	1,171 1,224 1,390 1,528 1,625 1,638 1,682 1,740 1,755 1,790 1,802	1,153 1,159 1,210 1,232 1,238 1,261 1,272 1,296 1,309 1,340 1,361 1,335 1,389 1,390 1,396 1,400 1,423 1,434 1,435 1,446 1,450 1,499 1,550 1,557 1,566 1,617 1,633 1,684 1,821 1,827 1,829	1,155 1,164 1,177 1,185 1,241 1,312 1,352 1,390 1,407 1,411 1,447 1,459 1,467 1,476 1,494 1,696 1,828	
	6	11	31	17	65
Proliferative arthritis	1,530 1,563		1,594 1,637 1,803	1,431 1,448 1,592	
	2		3	3	8
Infectious arthritis	.....	.....	1,373 1,788		
			2		2
Totals					75

of the patients who complained of indigestion were found to have tenderness over the colon and mucus in the stools, or diverticula of the sigmoid or gallstones or duodenal ulcer, and a few of these required a variation from the routine treatment by the corrective diet. Repeated attacks of gallstone colic were considered to indicate operation, and duodenal ulcer was treated by modifying the diet so as to give less food in frequent feedings, puréed vegetables, no lettuce, and more orange

juice. However, the complaint of indigestion was treated, whenever possible, by the routine diet regardless of the lesion. These patients experienced the same relief as those in whom no lesion could be demonstrated.

It is particularly remarkable that indigestion accompanying silent gallstones is almost invariably relieved by this diet. One is almost justified in assuming that these specific lesions arise on the pathologic background

TABLE 7.—*Degree of Improvement in Chronic Gastro-Intestinal Disease*

	No Change	Slight Improvement	Much Improved	Complete Relief	Total
Chronic gastro-intestinal.....	1,279	1,242	1,166	1,177	
	1,321	1,244	1,175	1,195	
	1,405	1,399	1,200	1,202	
	1,561	1,466	1,209	1,246	
	1,574	1,544	1,304	1,269	
		1,657	1,434	1,319	
		1,661	1,457	1,397	
		1,664	1,463	1,524	
		1,727	1,517	1,529	
		1,752	1,566	1,621	
		1,785	1,582	1,630	
		1,791	1,583	1,643	
		1,830	1,626	1,724	
			1,644	1,751	
			1,748	1,769	
			1,781	1,770	
			1,806	1,779	
			1,831	1,787	
				1,810	
Totals.....	5	18	18	19	55

predicated in indigestion and are merely incidental to its progression. In many of these chronic gastro-intestinal patients, but especially in those who had lived for long periods with low percentages of protective food, there occurred a loss in weight and an improvement in the color and quality of the skin and in the color of the sclerae and visible mucous membranes.

While headache is common in hypertension, brain lesions, sinus infection, eye disease and psychologic strain, it is often the symptom of much less obvious disease and may indeed never be explained except by the vague appellation of migraine. There were ten persons in this group of 501 cases who suffered from frequently recurring attacks of headache which might properly be placed in this category. The corrective diet was prescribed for each though it was supplemented in three cases by exercises and in two others by thyroid extract. The figures in table 8, which show that 50 per cent of these patients were much improved or completely relieved, indicate that metabolic processes related to food play a considerable, if not the predominant, part in migraine.

The relief afforded in degenerative disease by the corrective diet appears to be partly ameliorative and partly curative. In the ameliorative sense it is purely mechanical and probably arises from a reduction in what may be called the metabolic load, a mechanism evident in hypertension, in which the loss in weight indicates a cause and the fall in blood pressure an effect of a diminished cardiac load. In the curative sense it seems to arise through partial or complete restoration of injured structure, a mechanism evident in proliferative arthritis, in which objective pathologic processes apparently undergo complete resolution. The degree to which such resolution occurs must depend, of course, on the amount of previous injury and on the resilience of the tissues. In the case of advanced structural disease, it is of the most ephemeral character, several patients with hypertension having been completely relieved of the most distressing circulatory symptoms, only to succumb several months later to cerebral hemorrhage. It is an interesting fact that in any case the relief afforded by the corrective diet is dependent on a continuation of this diet. Having once lost the ability properly to metabolize an excess of nonprotective food, the patient is unable to resume his old eating habits without a return of the symptoms.

There seems to be, therefore, a distinct relationship between the quality of the food and the integrity of the body tissues which in middle life resist with increasing difficulty the onslaughts of the degenerative or senile process. The institution of the corrective diet, by diminishing the metabolic load and providing an excess of vitamins and suitable minerals, helps to maintain this integrity.

Mention has been made of the resilience of the tissues. Some explanation must be made of the differences in this quality of resilience or vitality which become so evident in the relations of individual patients to degenerative disease. Under approximately equal feeding conditions, one individual begins to develop degenerative disease at 35 while another escapes it till 70. If the effect of food on the integrity of the tissues is granted, this explanation must rest in an inherent difference in the ability of certain individuals to resist the effects of an excess of nonprotective food; in other words, in an inherited resilience or vitality which is already recognized in the dictum that some men are born with poor rubber in their arteries.

The matter of inherited resilience or vitality may be pursued still further by searching for factors that cause it to increase or to decrease through successive generations. There comes to mind in this connection a most significant series of experiments carried on through several generations of rats. The animals were fed a suboptimal diet, one adequate to prevent actual deficiency disease but without sufficient of the various elements to provide for optimal growth. While those of the first generation seemed to retain their normal health and reproductive functions, the animals of the second generation were smaller and less vigorous and produced smaller litters, and those of the third generation were still smaller and produced no viable offspring. Transposed into the human field, these experiments point to the protective foods as the important elements in increasing inherited vitality.[2]

TABLE 8.—*Degree of Improvement in Migraine*

	No Change	Slight Improvement	Much Improved	Complete Relief	Total
Migraine.....	1,605	1,547	1,570	1,495	
	1,736	1,659	1,783	1,502	
		1,793		1,583	
Totals.....	2	3	2	3	10

SUMMARY

The dietary histories of 501 patients have been tabulated so as to determine roughly the percentage of the total calories afforded by the protective and by the nonprotective foods.

Analysis of these histories supports the current criticism that the American dietary contains a large proportion of concentrated foods, low in vitamins, residue and alkaline minerals, and high in carbohydrates and acid minerals.

2. McCollum and Simonds: The Newer Knowledge of Nutrition, p. 536.

The average diet contained 12 per cent of protective foods, but a curve showing the number of persons at each percentage of protective food reached its peak at 6 per cent.

The percentage incidence of degenerative disease increased as the percentage of protective food decreased.

A diet containing 70 per cent of protective food was prescribed in forty-four cases of chronic circulatory disease, seventy-five cases of chronic arthritis, fifty-five cases of chronic gastro-intestinal disease and ten cases of migraine, a group of 174 persons, ten of whom had more than one disease; 73 per cent of these patients were much improved or completely relieved. Accompanying changes in body weight, skin, subcutaneous tissues, sclerae and visible mucous membranes seemed to indicate a general tissue change throughout the body.

CONCLUSION

A diet containing a high percentage of nonprotective foods conduces to early degenerative disease.

By feeding a diet containing a high percentage of protective food degenerative disease can be modified, usually in the sense of mitigation of distressing symptoms, often in the sense of actual restoration of the integrity of injured structure.

490 Post Street.

ABSTRACT OF DISCUSSION

DR. GEORGE B. EUSTERMAN, Rochester, Minn.: Most of us are willing to agree with the author that the average American diet may be somewhat deficient in vitamins, in mineral salts, and in residue. I am of the opinion that the present-day dietary of the city dweller, through economic betterment and enlightenment, contains an increasing amount of fresh vegetables and fruit. Paradoxic as it may seem, the rural population which lives at the source of such an essential food supply avails itself of it the least, especially in certain sections of the country. There is still a great deal of discussion as to whether a diet with a predominance of alkaline ash is of any particular value. Certainly the change from such a diet as Dr. Langstroth considers typical of the average American diet to the one he recommends would be beneficial, but whether that benefit can be attributed to the decrease in calories, to the increased vitamins, to the increased residue, to the salutary effect on gastro-intestinal physiology or to the predominance of alkaline ash is a matter that such rough clinical studies cannot decide. My experience and observations as regards the predisposing or causative factor of diet to degenerative disease in the average human subject invoke a conservative attitude. The idea that most if not all illness is due to a faulty diet is as old as recorded medicine. Instinctive selection of food has always afforded reasonable protection to such members of the race as merited survival. One is reminded of Stefansson's sage remark in his book "The Friendly Arctic" that there is probably no field of human thought in which sentiment and prejudice take the place of sound judgment and logical thinking as completely as in dietetics. The known criteria of an efficient diet are simple—adequate calories to supply energy, sufficient protein, qualitative as well as quantitative, a carbohydrate-fat ratio which must fall within certain limits, adequate daily fluid intake and safeguarding vitamins and inorganic salts. Caloric excess causes obesity only. It is not the excess that provokes disease but the complementary deficiency of other constituents; for example, those rare instances of pellagra in children on a ketogenic (high fat, low carbohydrate) diet in which the condition may be cured or remarkably improved by the addition of a meat protein. Persistent relative vitamin deficiency may provoke bodily discomfort, impaired sense of well being, and lowered resistance to disease. I have seen the Trappist monk after years of an exclusive diet of black bread and milk retain normal health. Hereditary predisposition to disease, occupational stress, environment, infections, and the natural wear and tear of life loom more important in the pathogenesis of degenerative diseases than anything else.

DR. W. D. SANSUM, Santa Barbara, Calif.: I wish physicians could agree on what I should like to call "ideal diet principles." We are agreed on calories. We do not want too few or too many. We do not want people to be fat. We are agreed that protein need not be high—from 0.66 to 1 Gm. per kilogram is sufficient for adults. In the past few years we have become more and more convinced that carbohydrate is the fuel of life. We are agreed that ample fluids should be used. Dr. Langstroth has emphasized the need for more of the protective foods. These include especially fruits, vegetables and milk. They contain the mineral foods, especially the alkaline ones and the vitamins, and they also furnish bulk for natural bowel movement. These seven principles, I believe, must be included in any ideal diet plan. We have been especially interested in the alkaline-ash group of foods. During the past eight years in a series of more than 5,000 cases, we have insisted that all diets be balanced to neutral urine, and in cases of marked degenerative changes, such as the blood vessel diseases, we have insisted that the diet be balanced so that the urine is consistently alkaline. The reaction of the urine gives an excellent guide to this phase of diet balance. We use the dye bromthymol blue. I agree whole heartedly with the author that the American dietary is seriously deficient in the protective foods, and our results certainly confirm his work.

DR. JAMES S. MCLESTER, Birmingham, Ala.: I agree with Dr. Langstroth as to the value of the type of diet he has used, but I am not sure that we are in entire accord as to the manner in which this regimen benefits the patient. It is difficult to believe that an increase in the supply of vitamins and minerals, even though the ration has hitherto been lacking in these essentials, will materially and in a short time influence the course of such diseases as arteriosclerosis, vascular hypertension, and myocardial degeneration. True, we know little of the origin of these degenerative diseases, but experience has taught that when they are outspoken in their clinical manifestations, then the process is already one of many years' standing, perhaps of decades, and that to attempt thus tardily to supply some hitherto missing substance is well nigh futile. We must look in another direction. My inclination is to say that these diets are beneficial largely because the ration is a subcalory one. These patients labor under a serious handicap and any measure which lessens the burden thrown on the various organs is likely to be beneficial. A subcalory diet does this, and in this manner produces the amelioration of symptoms seen by Dr. Langstroth.

DR. N. S. DAVIS III, Chicago: For several years I have been using, particularly in a group of cases of hypertension, a diet similar to the one described. However, I have not reduced the carbohydrate quite as much, and consequently the patients have not lost as much weight. They have distinctly improved and have been relieved of symptoms. I agree with Dr. McLester as to the protein element, and have made it a point never to put patients on a protein-free diet. I felt that in the etiology of this local group of degenerative diseases, diet is of enormous importance, and perhaps some of the things that we consider as being due to heredity might be due to diet, because the members of a family, generation after generation, have a tendency to live on the same kind of food. As they grow up and establish their own homes they continue to eat the same food they ate when they were children. It is important to figure out what, as Dr. Sansum said, is a proper rational diet, and to try to educate the public to that point. Of course, the medical profession must be educated before the public can be.

DR. FRED S. MODERN, Arrowhead Springs, Calif.: Even if we disagree with Dr. Langstroth's conclusions, bringing before the medical profession such an important thing as diet at a time when the whole country is dealing with diet is most timely. We know better than anybody else what is being done in regard to diet. These dietary fads are carried to such an extreme that they are taking the place of correct clinical diagnosis of physical examination. If we are swayed by catchwords and slogans and dietary methods, it is about time to do a big housecleaning. The question of acidosis being precipitated by diets is one which has been especially harmful. There is a tremendous propaganda, especially out in California, which is entirely exploited by commercial interests, and the facts which are supporting this whole structure are totally unconvincing.

DR. LOVELL LANGSTROTH, San Francisco: I have tried to show that a predominance of nonprotective foods brings about degenerative changes in certain individuals after the prime of life and that a diet high in protective foods tends to reverse these degenerative changes. We have to be careful in our interpretation of these facts because of the incompleteness of our knowledge of foods. There may be undiscovered vitamins or other important unknown factors, and it is therefore premature to attribute the effects of this food to any particular element or group of elements. I do not want to make any rigid interpretation. I should like to emphasize the importance of the superficial changes in the body which usually follow the corrective diet. They are quite striking to a person who is keen to observe the less obvious things about the patient. Particularly noticeable is the quality of the skin. It is softer, less harsh, pinker and cleaner, and looks more vital and fresh. The sclerae are whiter, shinier and clearer. The individual is more alert. These changes all seem to me to indicate something more than a psychic improvement from loss of weight. It is a common fact that broad shouldered, deep chested, short waisted individuals develop certain general types of diseases. It seems to me possible that these individuals are prone to develop these diseases because they take on the personality characteristics of male virility recognized in the expression "he-man." With this virility goes the male diet of bread, meat, potatoes and sweets. In this way these diseases would appear to follow constitutional type.

THE LACK OF THERAPEUTIC VALUE OF ANTIMENINGOCOCCIC SERUM

J. MERCER ANDERSON, M.D.
SALT LAKE CITY

This paper is to show that the ordinary commercial antimeningococcic serum was therapeutically inadequate in the recent epidemic. During the past winter a series of sixty cases of the epidemic type of cerebrospinal meningitis were treated in Dr. Groves Latter-Day Saints' Hospital. The first ten cases were 100 per cent fatal, some patients dying in less than eighteen hours and others lingering for days. Of the sixty patients, thirty-two lived and twenty-eight died, giving a mortality of approximately 47 per cent. Nine patients died in less than twenty-four hours from the time of admission to the hospital.

As soon as a diagnosis was made, large amounts of serum were given intravenously and intraspinally. In addition, some patients received it intracisternally. Treatment was given two or three times daily during the first seventy-two hours. Serum was not given intravenously after the second day, except in one case.

Because of the great fatality of the early cases, we secured antimeningococcic serum from the public health department of one of the larger states. This serum seemed to give much better results because of such patients as received the serum, twenty-one in all, fourteen lived and seven died, giving a mortality of 33.3 per cent. In those patients receiving it alone the mortality was 29 per cent. Among patients who did not receive this serum the mortality was 54 per cent, or 21 per cent higher than among those receiving the special serum. As near as we can tell, equally good results were obtained with one other of the commercial serums.

In reporting the cases with regard to the therapeutic value of each serum, a certain amount of difficulty is encountered because some of the patients received more than one kind of serum.

For purposes of convenience the serums will be called A, B, C, D and E to represent the serum from the various manufacturers. Serums B and E were thought from general observation to be the most effective, and in the group treated with only B or E serum the mortality was found to be 29 per cent. No patient received A serum alone but five received it in combination with one or more of the other serums. One patient receiving serums A, B and C died; three with A and B serums lived, and one with A, B and E lived. No patient receiving serum C, either alone or in combination with other serums, lived. No patient received serum D alone. One patient having serums D and C died. Two patients each had serums B and E in addition to serum D; both lived.

The greatest mortality was found in cases which were fulminating—the patients dying in twenty-four hours or less from the time of admission. This group includes nine cases—two patients not receiving any serum and seven receiving only one treatment. These cases are not used in the series just given. Several patients died before they could be brought to the hospital.

Attempts were made to type the organism. Agglutinations were accomplished with one of the commercial serums and with the board of health serum but none of the others. It would not agglutinate with serum of type I, II or III. When the organism was cultivated on blood agar, it was found one morning that about one half or more of the growths were destroyed, apparently by some bacteriophage. This was thought to have originated in the blood of one of the laboratory workers from whom the blood was obtained. Attempts were made to isolate the bacteriophage, but it disappeared during the process.

CONCLUSIONS

1. The organism of the past epidemic was not of type I, II or III.
2. There was a marked variation in virulence of the organism.
3. There is a marked variation in the therapeutic value of the commercial serums—only one of the four used and the board of health serum were therapeutically adequate, each giving a mortality of 29 per cent as compared to the general mortality of 47 per cent.
4. The organism was agglutinated by the board of health serum and one commercial serum, corresponding to the therapeutic results obtained.

115 East on South Temple.

Prostatic Infection.—From its position, histological structure, blood and lymphatic supply, the prostate is particularly prone to infection. Swinburne believes chronic prostatitis to be as common as chronic tonsillitis. In a review of over 2,000 cases, Von Lackum concludes that 35 per cent of all males have some degree of prostatitis. The infection may be initiated by a nonspecific urethritis, but this external route is rare. More commonly, the blood and lymphatic systems are the transporting agents. The original source of the infection is usually some focus elsewhere in the body; as abscessed teeth, chronically infected tonsils, chronic sinusitis, chronic cholecystitis, and acute infectious diseases—remote or recent. About 50 per cent of all cases of chronic prostatitis are the result of a gonorrheal urethritis, but the 50 per cent that are not preceded by gonorrhea are the cases with which we are particularly concerned. The most common infecting organism is the streptococcus, usually in a mixed culture with the staphylococcus and diphtheroids. In 109 cases, Herrold found the streptococcus in 34 per cent. In a series of 176 cases, we have found the streptococcus present in 55 per cent. *Bacillus coli* is sometimes found but it is usually associated with an upper urinary tract infection. —Wear, J. B.: The Present Status of Chronic Infections of the Prostate Gland, *Wisconsin M. J.*, November, 1929.

DIFFERENTIAL DIAGNOSIS OF PAIN IN THE RIGHT SIDE OF THE ABDOMEN

WITH PARTICULAR REFERENCE TO UROLOGIC LESIONS *

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AND
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There are so many important organs located in the right side of the abdomen that the ability of the physician or surgeon is often taxed to the utmost in order to arrive at an accurate diagnosis when the patient complains of persistent pain in this region or when a mass presents itself.

Our attention was directed particularly to this problem by the large number of patients on whom operations for chronic appendicitis had been done and whose pain was not relieved by the operations.

The follow-up clinics of the surgical divisions in our hospital have discovered many patients who were not relieved of right-sided pain by various operations on the appendix and gallbladder. These unrelieved patients were sent to the urologic department for investigation of the right urinary tract. The presence of upper urinary tract lesions among these patients proved to be so prevalent that the practice of having a cystoscopic examination made before any operation in so-called chronic appendicitis or chronic cholecystitis has become almost the rule. The urologic investigations made in these cases have been most illuminating and many useless operations have been avoided. On the other hand, many necessary operations on unsuspected lesions of the right kidney and ureter have been performed.

Pain in the right upper quadrant of the abdomen may be due to various lesions of the liver, pyloric end of the stomach, gallbladder, duodenum, right kidney, colon and appendix. The pancreas, too, occasionally gives rise to pain in this area. As causes of acute pain in the right lower quadrant there are acute appendicitis, salpingitis, distention of the cecum with gas, right ureteral calculus, twisted pedicle of a right ovarian cyst, acute ureteritis, lead colic, pelvic abscess, retained right testis, periostitis of the ilium, and local injury. As the more common causes of subacute or chronic pain in the right lower quadrant one may mention most of the pathologic conditions enumerated in the preceding sentence and in addition movable right kidney, tuberculosis of the right kidney and ureter, carcinoma of the cecum, ulcerative colitis, aneurysm of the right iliac artery, iliocecal kink (Lane), periappendicular adhesions, pericecal adhesions, psoas abscess, sacro-iliac joint disease, tuberculosis of the hip, inflamed or tuberculous iliac lymphatic glands, intestinal obstruction from any cause, obturator hernia, herpes zoster, angioneurotic edema, infective arthritis and ostearthritis of the lumbar vertebrae, dysentery, typhoid and sarcoma, osteoma or chondroma of the iliac bone. It should also be borne in mind that not infrequently lobar pneumonia, pleurisy or other chest conditions may be the source of pain referred to the abdomen.

In view of the great variety of possible causes of right-sided abdominal pain, it is not surprising that errors in diagnosis in cases presenting this symptom are by no means rare. It is this fact that directed our attention to a consideration of this subject.

At the Brady Foundation, we frequently have patients who have been previously diagnosed as having a certain condition and who have been treated and have in many instances undergone a major surgical procedure on the basis of this diagnosis but who have not been relieved of the symptoms for which they originally sought relief.

Many articles have been written in the last few years on the subject of right-sided abdominal pain. Most of these, however, have been based on general impressions rather than on a study of an actual series of cases, and few of these articles have given sufficient importance to urologic factors in diagnosis.

Deaver [1] emphasizes the fact that a high appendix may easily simulate gallbladder disease. He states that the four most common causes of pain in the right upper portion of the abdomen are, in order of frequency, (1) appendix in high position, (2) infection of the biliary tract, (3) acute and subacute perforated gastric or duodenal ulcer and (4) subdiaphragmatic abscess.

Floyd [2] states that he has several times seen patients with right renal tuberculosis, right renal calculus and right ureteral calculus operated on for appendicitis without relief of symptoms. Early pneumonia should be considered in cases of pain on the right side of the abdomen. One should also examine the right inguinal and femoral rings in these cases. He also mentions the fact that pain due to renal disease almost always begins in the lumbar region or in the lateral or anterior renal region, radiates downward and forward into the pelvis, and is usually accompanied by pollakiuria.

The necessity of taking an accurate history in these cases is stressed by MacMillan.[3] Rectal and vaginal examinations must not be overlooked. Morphine should be withheld until an accurate diagnosis has been arrived at. The gastric crises of tabes and lead colic are to be thought of. He cites a case of gonorrheal epididymitis in an undescended testicle which had been diagnosed as appendicitis.

Starry [4] has written on right-sided abdominal pain of thoracic origin, mentioning in this connection pleurisy, consolidation or congestion of the right lower lobe of the lung, neuritis involving the lower thoracic nerves, adhesions between the visceral and parietal pleura at the base of the lung, and dissecting aneurysm of the aortic arch.

Blaisdell [5] states that many patients are still being operated on for appendicitis without relief of symptoms. Pain in the right lower quadrant of the abdomen, when not accompanied by gastric symptoms or fever, points to disease of the urinary tract as often as to the

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* Read before the Section on Urology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations and a large table. The complete article will appear in the Transactions of the Section and in the authors' reprints.

1. Deaver, J. B.: Some Practical Points in Consideration of Disease of the Right Upper Abdomen, Boston M. & S. J. **191:** 805-809 (Oct. 30) 1924.
2. Floyd, W. O.: Differential Diagnosis of Acute Right-Sided Abdominal Lesions, J. Tennessee M. A. **16:** 275-279 (Dec.) 1923.
3. MacMillan, A. E.: Differential Diagnosis of Lesions in the Right Lower Quadrant of the Abdomen, Journal Lancet **44:** 293-299 (July 1) 1924.
4. Starry, L. J.: Right Abdominal Pain of Thoracic Origin, J. Oklahoma M. A. **19:** 323-324 (Dec.) 1926.
5. Blaisdell, H. A.: Differential Diagnosis of Pain in the Right Lower Quadrant of the Abdomen, New York State J. Med. **26:** 395-396 (May 1) 1926.

appendix. He concludes that any sign or symptom which, after careful study, seems to arise from a source in the urinary tract is an indication for a complete urologic survey.

Finkelstein [6] believes that ureteral stricture, while not as frequent as some urologists have thought, occurs often enough to justify more frequent ureterograms. A negative plain roentgenogram, negative urinary

TABLE 2.—*Previous Diagnosis and Our Observations and Treatment in Thirty-Nine Cases in Which Major Operations Had Been Performed*

Previous Diagnosis and Treatment	Cases	Our Diagnosis	Cases	Our Treatment	Cases
Appendicitis..... and Appendectomy.....	31	Nephroptosis and kink of ureter....	10	Nephropexy.....	2
				Palliative measures	8
	31	Nephrolithiasis....	5	Nephrectomy.....	2
				Nephrotomy.....	3
		Ureterolithiasis....	6	Dilation.....	6
		Stricture of ureter.	7	Dilation.....	7
		Hydronephrosis...	1	Nephrectomy.....	1
		Pyonephrosis.....	1	Nephrectomy.....	1
		Renal tuberculosis.	1	Nephrectomy.....	1
Appendicitis and cholecystitis.....	3	Nephrolithiasis....	1	Nephrectomy.....	1
Appendectomy and cholecystectomy.	3	Ureterolithiasis....	1	Dilation.....	1
		Stricture of ureter	1	Dilation.....	1
Salpingitis and oophoritis.....	5	Nephroptosis.....	2	Palliative.....	2
Salpingectomy and oophorectomy...	5	Stricture of right ureter.....	2	Dilation.....	2
		Nephrolithiasis, small.....	1	Dilation.....	1

observations and absent bladder symptoms do not exclude the urinary tract as the seat of trouble. Further evidence through the medium of cystoscopy and ureteropyelography is necessary. In three of the six cases reported by him, unnecessary abdominal operations had been done. He cites a case in which a patient was operated on for appendicitis and died in one week of calculous uremia.

That many patients with pain on the right side are not in need of surgical treatment of any kind is the chief point made by Schultz.[7] He believes that at least half of all appendectomies are not indicated and refers to Coffey's contention that more than half of those patients with right-sided abdominal pain do not have any organic disease. Schultz emphasized gastroenteroptosis as the cause of pain in a considerable percentage of these cases.

Shellito [8] discusses the value of the use of gallbladder visualization, the barium meal, cystoscopy, pyelography and the duodenal tube in arriving at a correct diagnosis.

Mayhew and Smith [9] believe that unrecognized stricture causes more needless surgery than almost any other pathologic condition. They also mention allergic reactions as the cause of abdominal pain and emphasize the need of a complete general examination before undertaking any local therapy.

The extreme range of renal mobility is mentioned as a frequent cause of abdominal pain in adolescent females, by O'Conor.[10] He recognizes the great value of pyelography and ureterography and states that in some cases these procedures should be done in both the prone and the semierect positions. Twenty-eight cases are mentioned in which a mistake in diagnosis had been made. Of these, twenty-one patients had been operated on without relief of symptoms.

Howard [11] mentions the fact that the mental make-up of the patient should be considered in interpreting the significance of the pain of which he complains, whether, for example, the patient is of a neurotic or a phlegmatic temperament. He also differentiates between inflammatory and noninflammatory kidney pain on the basis that the former is aching in character and is increased by pressure while the latter is more severe and paroxysmal.

In the experience of Barney,[12] in from 15 to 20 per cent of lesions of the kidneys and ureters previous operations had been performed without relief. Barney gives special attention to (1) stricture of the ureter (especially in women), (2) kinked ureter (which may be due to renal ptosis), (3) redundant ureter or herniation of the ureteral sheath, aberrant renal vessels so placed as to interfere with drainage (not rarely the cause of hydronephrosis), (4) malpositions of the kidney and (5) horseshoe kidney. Horseshoe kidney, which occurs once in approximately 1,100 persons, almost always becomes the seat of trouble—infection, calculus or anatomic abnormalities. Many other varieties of congenital abnormalities of the kidneys and ureters may cause abdominal pain; e. g., bifurcated ureter, double ureter and bifurcated renal pelvis.

Table 1 shows in detail each of the eighty-four cases studied and indicates the symptoms, previous diagnosis and treatment, our examination, and observations, diagnosis, treatment and results.

A critical review of the cases of this study reveals the fact that thirty-one of the patients had actually had the appendix removed without relief of symptoms. Ten of these patients were found to be suffering from right nephroptosis with kinking of the ureter; eight of these were relieved by fitting the patient with a proper belt provided with a pad to elevate the right kidney. Two of them were not relieved after trying the belt for over a year; nephropexy was therefore performed with satisfactory results. Eleven of them had calculus,

TABLE 3.—*Ten Cases in Which a Diagnosis of Appendicitis Had Been Made and Operation Refused by the Patient*

Previous Diagnosis	Cases	Our Diagnosis	Cases	Our Treatment	Cases
Appendicitis.....	10	Nephrolithiasis....	3	Nephrectomy.....	1
				Pyelotomy.....	1
				Dilation.....	1
		Renal tuberculosis	1	Operation advised and refused.....	1
		Pyelitis.....	1	Lavage.....	1
		Stricture of ureter	3	Dilation.....	3
		Ureterolithiasis....	2	Dilation.....	2

five in the kidney requiring operative intervention, two requiring nephrectomy and three being relieved by nephrotomy. The remaining six were afflicted with ureteral calculi which were removed by dilation without operation.

Seven patients suffered from stricture of the ureter. The pain, for which the innocent appendix had been removed, was relieved by mere dilation of the ureter.

One patient with hydronephrosis was relieved by palliative means. It was necessary to remove the kidney in two other patients, one suffering from renal tuberculosis and the other from pyonephrosis.

6. Finkelstein, N.: Ureteral Obstruction with Abdominal Pain as the Chief Complaint, Boston M. & S. J. **196**: 96-106 (Jan. 20) 1927.
7. Schultz, A. A.: Right-Sided Abdominal Pain, J. Iowa M. Soc. **17**: 53-57 (Feb.) 1927.
8. Shellito, J. C.: Diagnosis in the Right Upper Quadrant, J. Iowa M. Soc. **13**: 267-272 (July) 1923.
9. Mayhew, J. M., and Smith, A. L.: Diagnosis in Right-Sided Abdominal Pain, Colorado Med. **20**: 275-282 (Oct.) 1923.
10. O'Conor, V. J.: Value of Pyelography Before Undertaking Surgical Measures for Relief of Obscure Types of Abdominal Pain, Illinois M. J. **42**: 9-13 (July) 1922.
11. Howard, R. M.: Right Abdominal Pain: Kidney, J. Oklahoma M. A. **19**: 317-318 (Dec.) 1926.
12. Barney, J. D.: Urological Causes of Abdominal Pain, Boston M. & S. J. **195**: 111-116 (July 15) 1926.

Three patients had not only the appendix removed but the gallbladder as well. One of these was cured by dilating the right ureter and allowing the small calculus there to drop out. Another one had a stricture of the ureter which was dilated and the pain was entirely relieved. The third patient had a kidney so filled with calculi that it had no function and was removed.

Five women, who had submitted to salpingectomy and oophorectomy without relief of symptoms, were all relieved by palliative treatment. Two of them had nephroptosis and were relieved by a kidney belt properly padded. Two had their narrowed ureters dilated, and one other passed a calculus after dilation of the ureter. Ten others were advised to have the appendix removed but refused, and of these three were found by us to have stricture of the ureter; three had renal calculus (two pyelotomy, and one nephrectomy); two had ureteral calculus; one pyelitis, and one who had

TABLE 4.—*Diagnosis as Understood by the Patient Who Was Being Treated Medicinally and Had Not Been Advised to Be Operated On*

Previous Diagnosis	Cases	Our Diagnosis	Cases	Our Treatment	Cases
Renal calculus.....	8	Renal tuberculosis	1	Operation advised	1
		Pyelitis.....	2	Pelvic lavage.....	2
		Stricture of ureter	4	Dilation.....	4
		Renal tumor.....	1	Nephrectomy.....	1
Indigestion.....	4	Renal calculus.....	2	Nephrectomy.....	1
				Pyelotomy.....	1
		Stricture of ureter	1	Dilation.....	1
		Carcinoma of kidney.....	1	Nephrectomy.....	1
Sciatica.....	2	Renal calculus.....	2	Pyelotomy.....	2
Stomach trouble...	2	Right nephroptosis	1	Nephropexy.....	1
		Renal calculus.....	1	Pyelotomy.....	1
Intestinal colic.....	2	Pyelitis.....	2	Renal pelvic lavage	2
Cystitis.....	2	Renal tuberculosis	2	Nephrectomy.....	2
Gallbladder disease	2	Stricture of ureter	1	Dilation.....	1
		Hypernephroma...	1	Nephrectomy.....	1
Renal tuberculosis	1	Renal calculus (small).....	1	Dilation.....	1
Chronic nephritis..	1	Renal tuberculosis and calculus.....	1	Nephrectomy.....	1
Kidney trouble.....	1	Renal tuberculosis	1	Nephrectomy.....	1
Perinephritis.....	2	Renal tuberculosis	1	Nephrectomy.....	1
		Acute nephritis....	1	Decapsulation.....	1
Pyelitis.....	1	Renal calculus.....	1	Pyelotomy.....	1
Renal tumor.....	1	Nephroptosis and kink of ureter....	1	Belt.....	1
Various diagnoses	5	Pyonephrosis.....	1	Nephrectomy.....	1
		Renal calculus.....	1	Nephrectomy.....	1
		Ureteral calculus...	1	Ureterotomy.....	1
		Renal calculus.....	1	Pyelotomy.....	1
		Stricture of ureter	1	Dilation.....	1

tuberculosis of the kidney refused operation. Twenty-three patients who had been treated for varying periods of time medicinally, without relief, took our advice and submitted to operation. Eleven others were relieved by palliative means and one patient diagnosed as having renal calculus but really suffering from tuberculosis of the kidney refused operation and is being treated in our "inoperable and postoperative urinary tuberculosis clinic."

In this series of eighty-four cases there were forty-eight females, approximately 59 per cent, whose ages varied from 16 to 74, the average age being 37.75 years. There were seven coy individuals who gave no age.

The thirty-six males, 41 per cent of the cases, varied in age from 16 to 76 years, the average being 35.41 years.

It will thus be noticed that the ages are approximately the same both as to the average and variation. There are a few more women than men in this series, although our clinics have about five times as many men as women in attendance.

It will be seen that thirty-eight, about 46 per cent of the cases, were called simple chronic appendicitis. A diagnosis of gastro-intestinal disorders was fixed on the patients in eight cases, while seven of them were falsely diagnosed as having nephrolithiasis. Numerous diagnoses were mentioned in seven cases, while three patients were supposed to have gallbladder disease and three others were told that the cystitis from which they suffered was responsible for the right-sided pain that caused them to seek medical advice. Four other patients were told that they had appendicitis accompanied by retroverted uterus, cholecystitis, adnexal disease and abdominal adhesions.

In order to reach a proper diagnosis in each case a thorough history was elicited, a complete general examination was then done and finally a complete urologic examination, including pyelography, whenever indicated, was done.

Our observations are collected in tables 2, 3 and 4, which indicate the previous diagnoses and treatment and our observations and treatment.

Of this entire series thirty-nine, or 47.5 per cent, of the patients had previously undergone major surgical procedures without relief of symptoms. Many other patients in this group had been advised to have various operations which would not have relieved them and all of the patients had had some sort of medical attention without the benefit of a correct diagnosis.

Thirty of the patients had some lesion of the right ureter, either narrowing, kink or calculus. Nineteen cases of stone in the kidneys were found, seven cases of right renal tuberculosis, and thirteen cases of right nephroptosis. Four cases of tumor of the kidneys were found, three of which were malignant.

It was necessary for us to operate on thirty-two of the patients in this series as follows: eighteen nephrectomies; seven pyelotomies; three nephrotomies; three nephropexies, and one ureterotomy.

Operation (nephrectomy) was advised in the case of a woman who had previously been advised to have her appendix removed. She refused our advice as she had previously refused the advice regarding an appendectomy and is now being treated in our "postoperative and inoperable tuberculosis clinic" by palliative means. She has had some amelioration of her symptoms and may become an instructive case to us.

Palliative measures for relief of symptoms were instituted with success in fifty-one cases. These measures consisted of applying a proper belt with pad to elevate the kidney in cases of right nephroptosis. Dilation of the ureter was practiced in cases of ureteral calculi and narrowing of the ureter. Renal pelvic lavage and the administration of urinary antiseptics were employed when pyelitis was detected.

Thirty-three patients were cured, forty-one were materially improved and three were unimproved. Two cases were too recent to determine the result of relief measures instituted. One patient refused treatment and in three cases no follow-up record was obtainable. There was one death in the series.

REPORT OF CASE

History.—H. W. T., a white man, aged 37, had been examined cystoscopically nine years before and a diagnosis of right nephrolithiasis was made, but operation was refused. He had had occasional hematuria during the previous two years. He was being treated medicinally for a gastro-intestinal disorder.

On admission the urine was cloudy; the specific gravity was 1.020, and there was a trace of albumin. The blood urea nitrogen, blood sugar and carbon dioxide were within normal limits. Cystoscopic and roentgen reports showed that the

left kidney shadow was larger than usual. A triangular shadow appeared in the lower pole. The right kidney shadow was of normal size and in good position. There were apparently two stones in the right renal pelvis, one about the size of the end of one's little finger and the other less distinct and slightly smaller. The right pyelogram showed filling defects where the shadows were noted. It was concluded from the

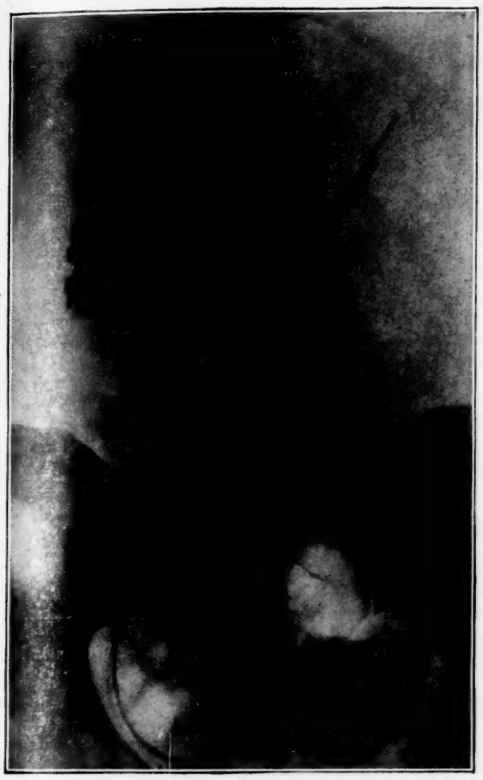

Fig. 3.—M. G., a woman, aged 44, was diagnosed as having appendicitis and tuberculosis of the right kidney. Relief was obtained by wearing a belt and by ureteral dilations and renal pelvic lavage. The roentgenogram was taken in the supine position.

roentgenograms that there were two stones in the region of the right renal pelvis, and one stone in the lower calix of the left kidney. The function of the right kidney was found to be greatly impaired while that of the left kidney was normal.

Physical examination was essentially negative, except that there were slight muscular spasms in the right lower portion of the abdomen, and the lower pole of the right kidney was palpable. On the day following admission the stones were removed from the right renal pelvis and a soft rubber catheter was placed in the pelvic opening, a cigaret drain being placed near it.

The third day after operation the temperature varied from 99 to 103.2 F., and nausea, occasional vomiting and hiccups were present. On the eleventh day after operation the blood urea nitrogen was 32 mg. and the patient was irrational at times. Two days later a few moist râles were heard at both lower bases and abdominal distention was present. Four days later the temperature ranged from 101 to 104; abdominal distention still existed and a blood transfusion was given, and a blood culture at this date showed *Bacillus coli*. A week later many ulcerated areas developed on the back. The following day a second blood transfusion was given. The twenty-seventh day after operation the ulcers had spread from the back until they were quite generalized. The twenty-eighth day after operation a third blood transfusion was given. The twenty-ninth day after operation the pulse became weak and rapid, breathing became more labored, and the patient died.

Postmortem Observations.—Over the entire back there were numerous ulcers from 1.2 to 5 cm. in diameter. Some ulcerations were present on the limbs and on the front of the chest. Throughout the lungs there were numerous small firm, nodular masses from 1.2 to 3 mm. in diameter.

Microscopic section of the lung showed suppurative, lobular pneumonia, and small abscesses containing colonies of bacteria. The colon was greatly distended throughout its entire length. There was no evidence of peritonitis.

Numerous small abscesses were scattered throughout both kidneys. The bladder contained 35 cc. of foul smelling, cloudy, greenish yellow urine. There was a congenital anomaly of the lungs, the right lung having two lobes while the left had three. There were miliary abscesses of the spleen. Arteriosclerosis of the aorta was present.

The pathologic diagnosis of cause of death was septicemia and multiple metastatic abscesses.

COMMENT

There is another side to this picture. Occasionally cases are diagnosed as renal or ureteral lesions which are ultimately found to consist of some extra-urinary disease.

A case presented itself recently in which there had been colic in the right loin, with some discoloration of the urine, assumed to be blood, and the roentgenogram showed a shadow apparently in the region of the right kidney pelvis. Urine collected from the two kidneys showed little difference in function on the two sides and the pyelogram proved the kidney to be considerably lower than its usual location and thus the diagnosis of stones in the gallbladder was definitely proved.

Another patient seen a few weeks ago suffered slightly from a moderate hydronephrosis with practically no diminution in function. The roentgenogram

Fig. 4.—Same patient as in figure 3 in erect posture, with catheter withdrawn after the method of O. S. Fowler.

disclosed the presence of large calcareous rings above the kidney shadow which were definite calculi in the gallbladder and which were the real cause of the patient's symptoms.

Ureteral catheterization will give a clue as to whether there is deficiency in the function of the right kidney,

which always accompanies any serious lesion. Roentgenography will call attention to calculi. Pyelography will point out defects in the right kidney pelvis and the position of that organ. Ureterography taken with the patient in a sitting posture, simulating man's natural position, with the catheter withdrawn to the lower end of the ureter and that viscus distended but not overstretched, will give the complete picture and display any lesion that may be present.

SUMMARY

There were more females (59 per cent) than males in this series of cases, although we see about five times as many men as women in our various clinics.

The ages of the women varied from 16 to 74, with an average of 37.75 years; the men showed about the same variation, 16 to 76, with an average of 35.41 years.

More than 50 per cent of the patients studied in this series were incorrectly supposed to have simple chronic appendicitis or appendicitis with some other intra-abdominal inflammation.

Of the entire eighty-four patients thirty-nine, or 47.5 per cent, had previously undergone some major surgical operation without relief of symptoms. Fifty-one of the patients were cured or relieved of their disease or discomfort by palliative means such as the application of an abdominal bandage with proper kidney pads, dilation of the ureter for the relief of stricture or calculus or both, drainage of pyelitis by means of the indwelling ureteral catheter, renal pelvic lavage, administration of urinary antiseptics, and other appropriate treatment.

We were obliged to operate in thirty-two cases, as follows: eighteen nephrectomies; seven pyelotomies;

Fig. 7.—C. F., a woman, aged 74, was being treated for gallbladder disease. Pyelography revealed the presence of a hypernephroma, which was removed. Note tumor of right kidney and marked deformity of pelvis.

three nephrotomies; three nephropexies, and one ureterotomy.

One patient refused to have a tuberculous kidney removed and is being treated by palliative means in our special clinic for the care of postoperative and inoperable tuberculosis of the urinary organs.

Occasionally patients are sent with a diagnosis of urinary disease who are found by a process of elimination to be suffering from some extra-urinary lesion.

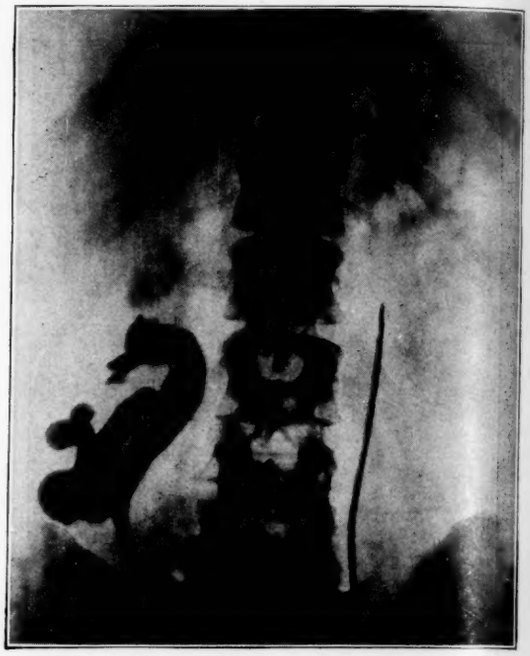

Fig. 8.—Mrs. L., a patient of Dr. J. M. Hitzrot, had pain in the right upper quadrant of the abdomen. A roentgenogram showed a stone in the region of the right kidney pelvis. The shadows were so confusing that it was suspected that the kidney shadow could be seen in its usual location. Pyelography clarified the situation and proved the shadows to be extra-urinary (gallstones).

One cannot help but be impressed by the large numbers of serious kidney and ureteral diseases that are overlooked in the enthusiasm of the medical advisers to remove the appendix or some other organ from the right side.

The lesson to be learned from this study is that when there is any indefinite pain in the right loin the patient is entitled to cystoscopy and pyelography in order to obtain a correct diagnosis or eliminate the right upper urinary tract.

The surgical divisions in our hospital now send all cases of so-called chronic appendicitis and cholelithiasis for a urologic examination before operation.

32 East Sixty-Fifth Street.

ABSTRACT OF DISCUSSION

DR. J. THOMAS WHITTY, Seattle: A patient, aged 23, had never been ill until she was 20, and then she had an attack of quinsy, from which she recovered. Within two weeks she had pain in the left side and more or less pain over the abdomen, with rigidity; she was operated on for appendicitis. She was relieved of pain while she was in bed but on getting up she developed frequency at night. This continued, with frequency once or twice at night for about six months. She changed climate but complained of pain in the right side and was operated on again for gallbladder trouble. The frequency continued, occurring two or three times at night. She was given bland lavage of the bladder for two years. She was then seen again and at that time was voiding urine every twenty or thirty minutes at night. I think this is a good illustration of what urologists can do in staff meetings, in bringing up such cases as this before the general surgeons. This patient had a typical diseased kidney and ureter; she had never been sick until she was 20, then was operated on twice, was sick for two

years, and then was operated on for the third time and following removal of the kidney and ureter, which were definitely tuberculous, she recovered. I think Drs. Lowsley and Twinem have covered the abnormalities of the ureter very thoroughly in their slides. In pyelitis I see quite a number of abdominal operations performed. I think the two main points in differentiating pyelitis from appendicitis, which is usually suspected, are that the pain in appendicitis comes and goes and in pyelitis it is more constant. Another symptom I notice is that the patient with pyelitis seems to be a little more ill, and there is more sweating. I think the authors' paper has a direct bearing on this meeting. I wish Dr. Keyes and some of the older physicians would tell us how we can emphasize such conditions to the medical men and general surgeons, so that many of these cases will not occur.

DR. BRANSFORD LEWIS, St. Louis: We are convinced of the accuracy of these observations, but it is our job to get these observations over to the general profession, both surgical and medical. I have been talking along similar lines for the past two years and now a number of our internists, who formerly looked rather skeptically on nephroplexy, have watched the results obtained and are convinced of its necessity and its efficacy; also, before having their patients operated on for appendicitis, in many cases they have them examined by a urologist. With respect to ptosed kidneys, I have called attention in many instances to the cases in which there is normal urine, with no blood or pus, and it is not possible to palpate a ptosed kidney, in which the malposition is plainly demonstrable by proper investigation but cannot be demonstrated by abdominal palpation, so I have insisted that the superficial and often misleading method of abdominal palpation for the determination of ptosed kidney be thrown out of the calculation absolutely. The way to discover the ptosed kidney is by ureteral catheterization, sodium iodide solution being used; one picture is taken in the supine position and then the patient is lifted up and another picture is taken in the upright position. Then we find the kidney dropped down in the pelvis, perhaps 3 or 4 inches. We have found this true in a number of instances. If this fact reaches the general physicians they will be convinced that they must not rely on abdominal palpation to solve so important a question as the cause of pain in the right side of the abdomen, and they will not operate uselessly so often. I have one patient who was operated on five different times without the cause of the trouble being determined. A ptosed kidney was the cause, and when that was corrected the patient got well, after ten years of discomfort and pain.

DR. WALTMAN WALTERS, Rochester, Minn.: The cases which Drs. Lowsley and Twinem have presented emphasize the necessity of investigating the condition of the urinary tract in the presence of indefinite right-sided abdominal pain. It should be remembered, however, that surgical lesions of the urinary and intestinal tracts may exist simultaneously. It is not uncommon for patients with prostatic hypertrophy to have duodenal ulcers or cholecystitis. However, appendicitis is the intra-abdominal lesion whose presence, if overlooked, may lead to serious consequences. Accuracy in determining the function of the urinary tract is distinctly due to urologic methods of diagnosis. Unfortunately, no such means of diagnosis are available in many of the intra-abdominal lesions, with the exception of duodenal ulcer. In intra-abdominal lesions the history, the general examination and the surgeon's judgment form the basis of diagnosis. In lesions of the stomach and duodenum the diagnosis is confirmed by the roentgen ray in 96 or 97 per cent of the cases. Such roentgenologic assistance is not at our disposal in the diagnosis of appendicitis. I am fully in accord with the authors regarding a thorough examination of the urinary tract in cases of uncertain diagnosis or in which cystoscopic investigation of the urinary tract is indicated for any other reason. It is probably true, however, that an accurate diagnosis can be made on an average in 80 per cent of all cases after a carefully taken history and a thorough general examination.

DR. OSWALD S. LOWSLEY, New York: Dr. Lewis spoke of an important matter and I wish to call attention to the fact that the discovery of these lesions has been almost entirely due to the use of pyelography and urography. We are fortunate in having with us the advocate of pyelography and urography. Professor von Lichtenberg established the method years ago; Dr. Keyes has steered us away from the use of harmful drugs, and every one knows how much Dr. Braasch has done for pyelography and urography. I am glad Dr. Walters brought out the other side of the question. It is most important for us to realize that every lesion that seems urologic is not necessarily so. There is a great tendency among urologists since we have so many instruments of precision to forget that we have hands, eyes and ears, and I consider Dr. Walters' remarks very timely. We certainly must do a general examination before resorting to the special tests. We emphasized these points in our paper.

A PROCEDURE IN THE MANAGEMENT OF ADVANCED SCOLIOSIS

PRELIMINARY REPORT *

PHILIP H. KREUSCHER, M.D.
CHICAGO

Advanced scoliosis presents an important economic problem. If the patient is not given any care, the deformity increases and in many cases the incapacitated individual becomes a charge of the county or state. If efficient management is instituted, the cost of treatment is not only considerable but is continuous over a period of years, during which time braces, jackets and mechanical appliances must be provided. That this has long been recognized is evidenced by the fact that more than a thousand articles have been written on the subject of scoliosis in the last ten years.

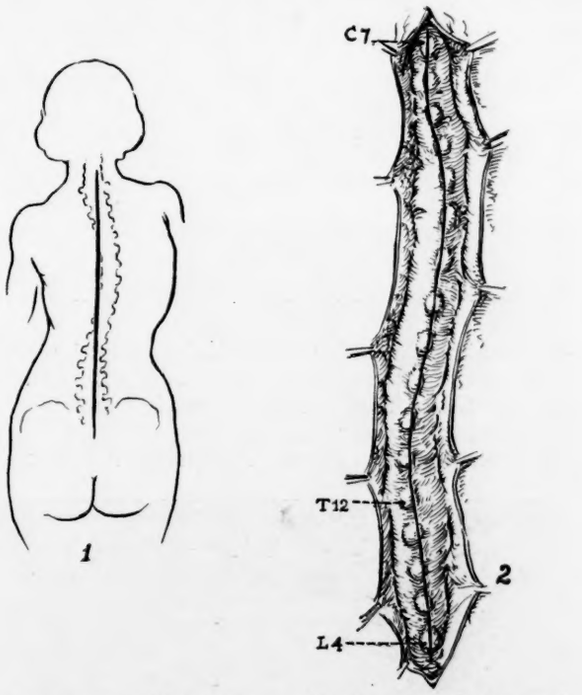

Fig. 1.—*1*, line of skin incision; *2*, with skin reflected, exposure is made of the spinous processes.

The deformed spine offers two distinct problems: (1) the correction of the deformity; (2) the maintenance of the accomplished correction.

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* This article is abbreviated in THE JOURNAL by the omission of some of the illustrations. The complete article appears in the author's reprints.

* Read before the Section on Orthopedic Surgery at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

The orthopedic surgeon must deal not only with the structural deformity or wedging of the vertebrae but also with the bony deformities of the thorax and the disalinement of the pelvic and shoulder girdles. To add to the difficulty in the correction and maintenance there is also the rotation of the vertebrae (fig. 10).

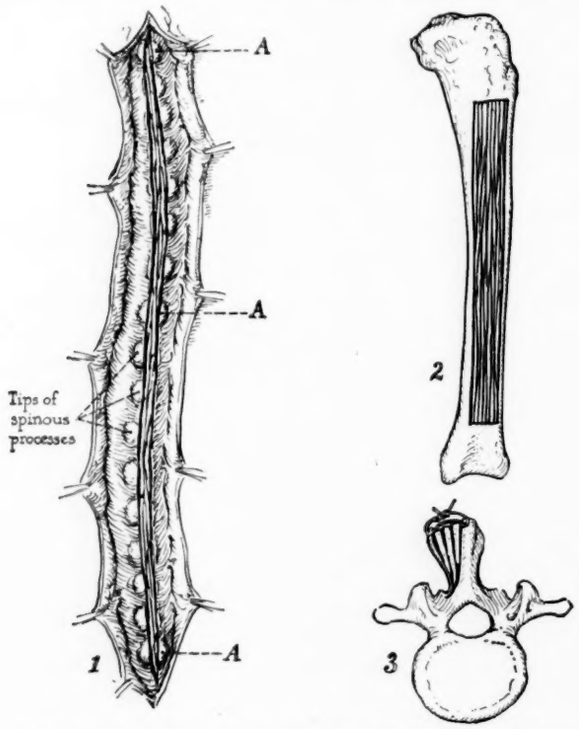

Fig. 2.—*1*, portion of spinous processes and laminae chiseled down on the concave side of the curves, making a groove for the interlocking graft; *A*, *A*, *A*, fixation points of graft. *2*, slender segments of bone prepared from the shaft of the tibia with motor saw. *3*, method of incision in spinous processes and laminae; overlapping graft in position.

Derotation, although attempted by various appliances, has not been permanently accomplished. In younger persons the correction of the curve has been successful, but when this correction has been obtained the braces or appliances must be continued, since it has long been

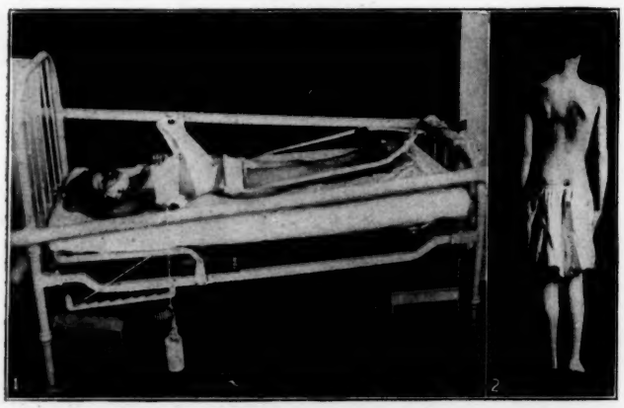

Fig. 3 (case 2).—*1*, method of traction application to both the head and the pelvis and lateral traction; the patient is lying on a Bradford frame. *2*, same patient six months after operation.

known that the absence of this support again permits a recurrence of the curve. This is especially true when the deformity follows infantile paralysis, as in these cases the muscle coordination is lost. This coordination of abdominal and spinal muscles is primarily necessary for the maintenance of correct posture.

The report made a number of years ago by the committee of the American Orthopaedic Association on the treatment of scoliosis convinced me that the results of the accepted forms of treatment by the use of supports and exercises were insufficient to bring about a permanent cure in cases of structural scoliosis. A procedure, in order to be efficient, must bring about a maximum amount of correction and, what is of still greater importance, must maintain this correction without the life-long application of casts, braces and appliances.

Almost concurrently in 1911, Hibbs and Albee described two distinct methods of fixation of the spine. Both of these methods have been used extensively up to the present time. My experience with a fixation operation which stabilizes a small portion of the curve has not been entirely satisfactory. It has seemed to me that not only should a fusion of the primary and

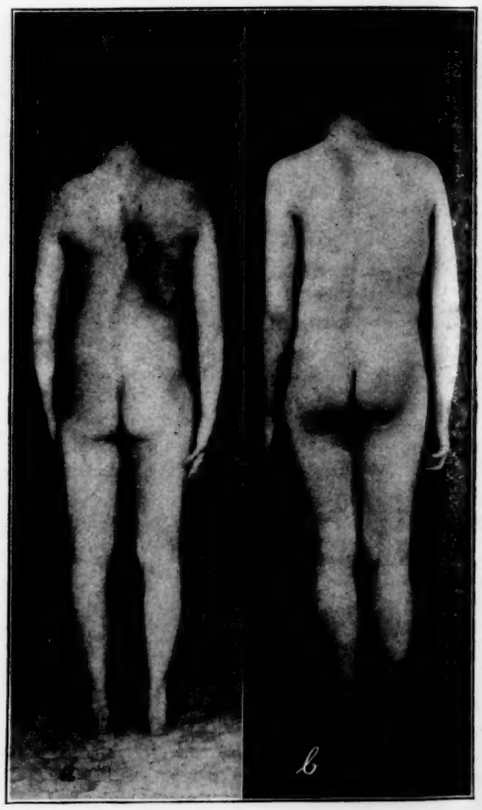

Fig. 4 (case 3).—Patient in standing position, *a*, before operation; *b*, thirteen months after operation.

secondary curves be made but the portion of spine that lies between the curves should also be fixed.

Ankylosing operations are indicated only after adequate muscular development and maximum correction have been attained. The operation must be followed by immobilization with a cast or brace for a sufficient period of time to insure stabilization.

METHOD ADOPTED BY AUTHOR FOR TREATING SCOLIOSIS

The procedure that I have followed for several years is indicated in patients with structural scoliosis between the ages of 14 and 20, especially scoliosis of paralytic origin.

The plan of management is divided into five stages: (1) the ambulatory stage; (2) the stage of recumbency

with traction; (3) forcible correction under anesthesia; (4) operation; (5) postoperative fixation.

1. The ambulatory stage, during which time plaster casts are worn, has for its purpose the preliminary correction of the deformity. The jacket is applied under head traction and is so constructed as to permit

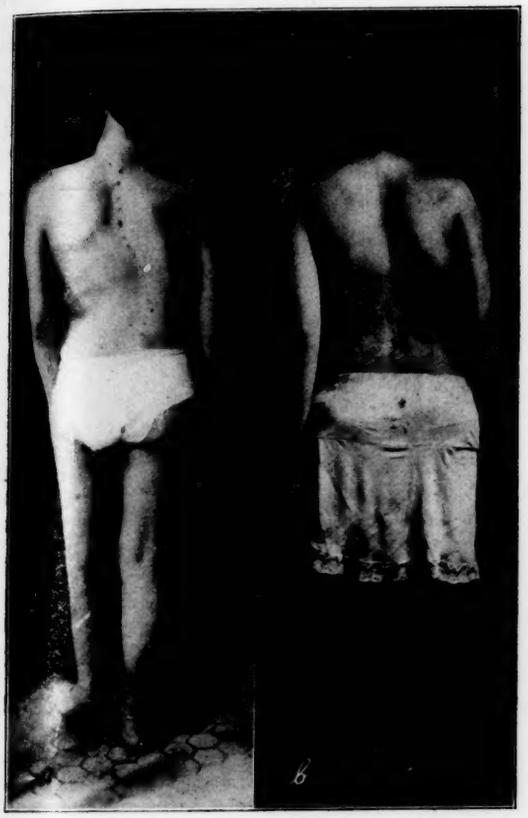

Fig. 5 (case 4).—*a*, before operation; *b*, fourteen months after operation.

of various deep breathing and other corrective exercises. One bears in mind especially the proper alinement of the pelvic and shoulder girdles. The patient reports for observation at the end of several weeks, so that a record may be kept of the progress. Jackets are reapplied at intervals of from five to six weeks. During this stage, one aims at correction of the deformity, improvement in chest conformation, muscular development, the formation of a compensatory curve, and the elimination of muscle spasm.

2. In the recumbent position, on a Bradford frame, without the application of a plaster jacket, continuous traction is applied to the head and the pelvis. The weight varies from 15 to 25 pounds (6.8 to 11.3 Kg.), depending on the size of the patient. By means of broad muslin slings, lateral traction is made also in the opposite directions. Extension thus applied for from eight to ten weeks accomplishes a further straightening of the curve and improvement in chest deformity (1, fig. 3).

3. All possible improvement by means of the corrective jacket and the traction in recumbency having been gained, a plaster body cast is applied under complete anesthesia, with traction on the head and pelvis, on the Abbott frame or Hawley table. While the cast is hardening, an effort is made to obtain further correction of the spinal curvature and the chest deformity without making undue pressure over any one point. In certain of the postural deformities and in rachitic cases, these three steps may suffice in bringing about the desired correction and stabilization. In cases of infantile scoliosis or advanced structural scoliosis from any cause, further stabilization is imperative and an operative procedure must follow.

4. After the patient has become well accustomed to the jacket thus applied, a narrow section of the cast, about 4 inches wide, is cut away to expose the spinal column from the seventh cervical vertebra to the sacrum. Through this opening in the cast, the operation is performed. The incision is in the midline extending from the seventh cervical to the lower lumbar vertebra. The skin is reflected and the spinous processes are exposed, especially on the concave side of the curve (fig. 1). About one fourth of each spinous process is cut down without undue trauma by means of a special hand chisel. Chisel and mallet have no place in an extensive operation on the spinal column. The incision in the spinous processes is carried down into the laminae. This portion of the bone having been reflected, slender segments of graft from 2 to 4 inches in length and one-sixteenth inch thick, taken from the patient's tibia, are placed in double or triple interlocked position into the entire groove, which has been prepared on the concave side of the curves. In the passage from the primary to the secondary curve, the spinous process is split through the middle and the graft is laid into it and becomes a definite fixation point. The same principle of fixation is applied at the upper and lower ends of the spine, so that in each case there are three distinct fixation points (fig.2). This line of multiple grafts becomes an independent stabilizing line (fig. 11). The operative time should not exceed one hour and thirty minutes. After the closure of the wound without drainage, the segment of cast which had been previously cut away is replaced over the sterile dressings and fixed with several rolls of plaster bandage. By following this method, the patient's spine is held in the corrected position, and much time is saved and useless manipulation avoided. In this operation the aim is maximum asepsis and speed with minimum trauma and hemorrhage. When necessary, shock is combated by a transfusion of 500 cc. of whole blood from a donor whose blood has been previously tested.

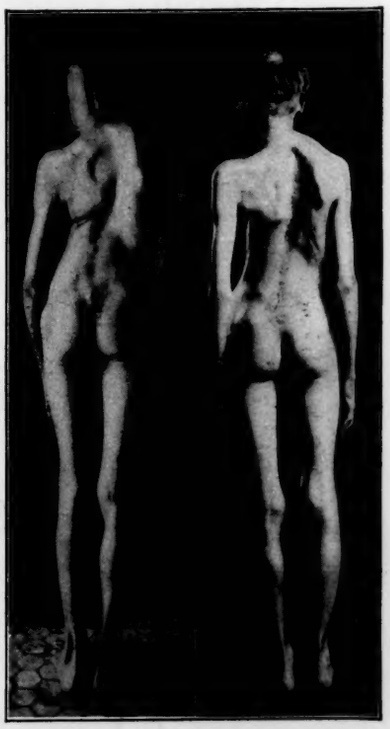

Fig. 7 (case 6).—*a*, curvature before operation; *b*, five months after opertaion; attention is called to the change in the conformation and length of the trunk.

5. The patient is put on his back in bed on a Bradford frame. Several days after operation, traction is again applied to the head and the pelvis. It is important that this traction be maintained for from six to eight

weeks throughout the period of convalescence. This traction insures the greatest amount of correction and the greatest amount of lengthening during that important postoperative period in which the preliminary ankylosis takes place. I have on several occasions been gratified by finding that my patients had increased from 3½ to 4½ inches in height from the stage of recumbent traction to the time when they were first able to be up and about. The entire procedure, beginning with the application of corrective casts and ending with the final discarding of the plaster jacket, covers a period of from ten to fourteen months. During the first three weeks after operation, the roentgenogram shows the graft plainly visible; from this time until the sixteenth week after operation, the graft shows but faintly. At the end of one year the maximum amount of ossification has taken place.

REPORT OF CASES

CASE 1.—M. S., a girl, aged 19, entered Mercy Hospital, Jan. 12, 1928, with advanced scoliosis of seven years' duration. During this time she had worn a cast for five years. There was marked disalinement of the shoulder and pelvic girdles with dorsal scoliosis and a constant tendency to an increasing deformity. Treatment was carried on according to the method outlined. Operation was performed, April 12. The highest postoperative temperature was 100 F. She was sent home in an ambulance, May 12, and wore a plaster jacket and leather support for one year after operation. She returned to work six months after operation (figs. 8, 9 and 15).

Fig. 11 (case 3).—Appearance of spine one year after operation. Note the ossification of the graft and the comparatively straight weight-bearing line produced by the long fusion.

CASE 2.—F. P., a girl, aged 10, entered Mercy Hospital, Feb. 13, 1928, with advanced dorsal scoliosis of seven years' duration, caused by continued poor posture. The deformity had increased up to the time of admission, despite corrective casts. The patient was treated according to the method outlined, operation being done, April 30. She was dismissed from the hospital, August 4, and wore a body cast for ten months. She returned to school five months after the operation (fig. 16).

CASE 3.—T. H., a youth, aged 19, entered Mercy Hospital, March 12, 1928, with advanced lumbar and dorsal scoliosis, paralytic in origin, of six years' standing. He had worn a brace for eight months, but the deformity was constantly increasing. He was treated according to the described method; operation was performed, May 17. The highest postoperative temperature was 100.6. The patient was dismissed from the hospital, June 22. He wore a leather jacket for eleven months, and returned to work six months after operation (figs. 10, 11, 4 and 17).

CASE 4.—J. D., a girl, aged 14, entered Mercy Hospital, May 10, 1928, with advanced scoliosis of paralytic origin of seven years' duration. She was treated according to the method outlined and fusion was done, June 7. The highest postoperative temperature was 101. She was discharged, July 9, and has worn a plaster jacket for eleven months. She returned to school five months after operation (figs. 5, 12 and 18).

CASE 5.—L. O., a boy, aged 16, was admitted to the hospital, Feb. 26, 1928, with advanced lumbar scoliosis, due to infantile paralysis, of ten years' duration. He was treated according to the method outlined, operation being performed, August 26. He was sent home from the hospital in an ambulance, November 26, and is now wearing a leather jacket. He is able to walk and to drive his own car (figs. 6, 13 and 19).

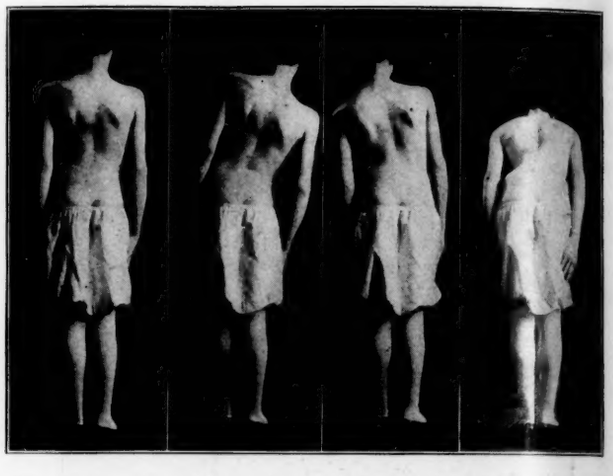

Fig. 16 (case 2).—Erect posture and flexion right, left and forward fourteen months after operation. Attention is called to the alinement of the shoulder and pelvic girdles in the erect posture.

CASE 6.—D. S., a boy, aged 14, was admitted to Mercy Hospital, November 23, with advanced dorsal and cervical scoliosis of nine years' duration and of paralytic origin. He was treated according to the method outlined but over a period longer than usual because of the marked deformity. Operation was done, Jan. 28, 1929. The highest postoperative temperature was 101. The patient was sent home in an ambulance, March 27. He is now up and about in a plaster jacket (figs. 7, 14 *a* and *b*, and 20).

COMMENT

In the first four cases, all postoperative support has been discarded and examination shows extensive fixation of the spine. Patients 5 and 6 are still wearing fixation jackets. The results in all cases have been most gratifying.

The economic problem of the patient with advanced scoliosis is solved only when he has become a self-sustaining individual. To this end I feel that it is necessary to overcome the gross deformity and bring about efficient permanent fixation of the spine. I have found that extensive stabilization in no way interferes with the pursuit of a productive occupation.

30 North Michigan Avenue.

Value of Pregnancy Tests.—It is obvious that pregnancy tests cannot locate the pregnancy; that is, the tests when positive do not tell us that the pregnancy is in the uterus, or in the tube, or in the abdominal cavity, or in the ovary. What is more, if the test is positive, we are sure that the fetus is alive and growing while in cases of hydatidiform mole, ectopic pregnancy and abortion, the tests are of less value. There are six or seven tests, none of which are absolutely reliable, though the Zondek-Ascheim test seems to offer great hopes of eventual perfection. — Mathieu, A.: Pregnancy Tests, *Medical Sentinel*, November, 1929.

OBSERVATIONS ON THE RESULTS OF TREATMENT OF SCOLIOSIS *

A. E. FLAGSTAD, M.D.
ST. PAUL

The treatment of scoliosis is still an open problem. Almost every available procedure leaves something to be desired. Irrespective of the great work that has already been done, a solution is still being sought. In reading the literature on scoliosis, there is evidence of disagreement on various phases of this problem; this is possibly best explained because differences in procedures and results of treatment in a measure are dependent on the etiology of the curvature, the severity and location of the curve, the duration of the curvature and the cooperation of the patient. Probably no field of orthopedic surgery has been blessed or burdened with more apparatus, and it still remains to most of the profession somewhat defiant.

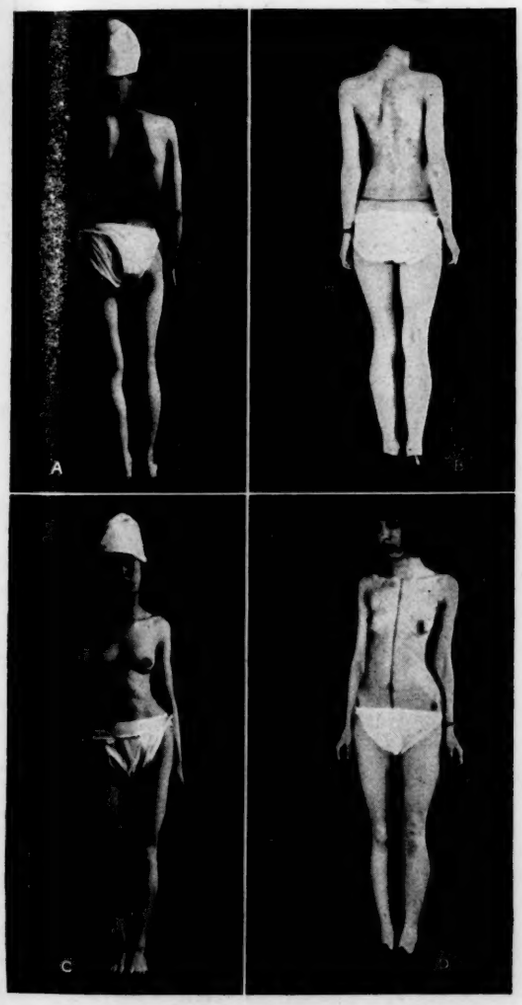

Fig. 1.—Patient operated on after series of corrective jackets: *A*, posterior view before operation; *B*, posterior view after operation; *C*, anterior view before operation; *D*, anterior view after operation. Patient observed two years after operation, and spine remains fixed.

In reviewing the literature one is impressed by the fact that while in general there is a fairly definite accepted basic plan, the methods of attack and the results obtained are still at variance, and opinions and procedures still differ. One can find a good number [1] in the profession advocating a conservative plan of treatment but not necessarily agreed on just what particular plan should be followed. On the other hand, one choosing to resort to operative procedure can find a great deal of material on this phase; [2] here again technic differs, and operative results and reports are at variance. These differences express the magnitude of the problem of scoliosis; it invites further thought and study to all that has gone before. It is the accumulation and the sorting out of this material that probably will bear fruit, and some day what now appears to be an open problem will be a standardized procedure presenting fairly definite and uniform results.

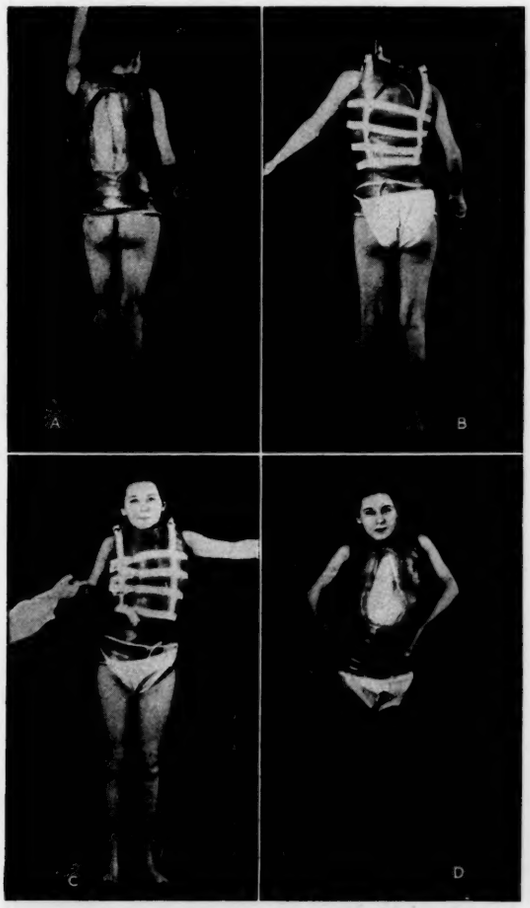

Fig. 2.—Patient in operative cast nine weeks after operation: Right dorsal curve left the side of concavity. Left shoulder was lower and left pelvis was raised; left side was narrowed. Position of patient in cast somewhat reversed and held in as much correction as possible: *A*, operative field window out; *B*, window replaced; *C*, anterior view, respiratory window replaced; *D*, respiratory window removed.

* Read before the Section on Orthopedic Surgery at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

1. Truslow, Walter: Nonoperative Treatment of Scoliosis, J. Orthop. Surg. **3**: 229 (May) 1921. Steindler, A.: Diseases and Deformities of the Spine and Thorax, St. Louis, C. V. Mosby Company, 1929, Chapter III, Scoliosis: XI. The Treatment, p. 195. Ober, F. R., and Ghormley, R. K.: Scoliosis, J. A. M. A. **90**: 361 (Feb. 4) 1928. Galeazzi, R.: Treatment of Scoliosis, J. Bone & Joint Surg. **11**: 81 (Jan.) 1929. Steindler, A.: Compensation vs. Correction in the Treatment of Structural Scoliosis, ibed. **8**: 570 (July) 1926.

2. Hibbs, R. A.: Report of Fifty-Nine Cases of Scoliosis Treated by Fusion Operation, J. Bone & Joint Surg. **6**: 223 (Jan.) 1924. Forbes, M. A.: Operative Treatment of Scoliosis, ibid. **4**: 446 (July) 1922. Kleinberg, S.: Results of Spine Fusion for Scoliosis, ibid. **11**: 66 (Jan.) 1929. Lewin, Philip: Proposed Modified Fusion Operation on the Spine, ibid. **6**: 162 (Jan.) 1924. Moffat, B. W.: The Operative Treatment of Scoliosis, ibid. **10**: 316 (April) 1928. Whitman, Armitage: A Variation in Operative Treatment in Structural Scoliosis, J. A. M. A. **89**: 2159 (Dec. 14) 1927. Albee, F. H.: Orthopedic and Reconstructive Surgery, Philadelphia, W. B. Saunders Company, 1929, p. 424. Kleinberg, S.: Scoliosis, New York, Paul B. Hoeber, 1926.

In summarizing my observation on the results of treatment in 100 cases reviewed from private practice and 150 cases studied at the Gillette State Hospital, I believe that the problem and result of treatment in private practice and charitable institutions is somewhat different. In private practice I find that expense is a definite factor; in the past and even now, thoroughness of study by roentgenograms, physical therapy or observation has often been insufficient. Frequently the patient and parents only half grasp the magnitude of this problem and consequently return home and indifferently or inadequately carry on; failure to find time and the necessary means often disturbs the continuity of treatment. All too frequently, to the layman, the correction of a deformed spine seems a simple matter irrespective of its duration. These factors, in a measure, I believe at times explain the failure to obtain results through conservative treatment.

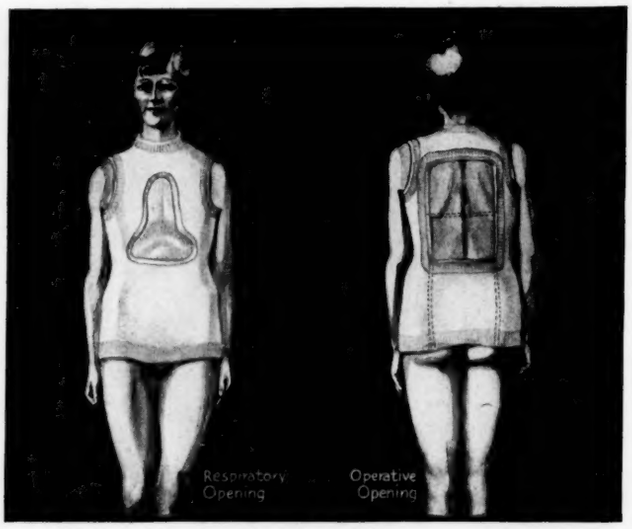

Fig. 3.—Operative jacket which is applied immediately after maximum correction has been obtained: Anterior view showing respiratory window. Posterior view, upper window for operations on dorsal region. Lower dotted window, operations on dorsolumbar and sacral region.

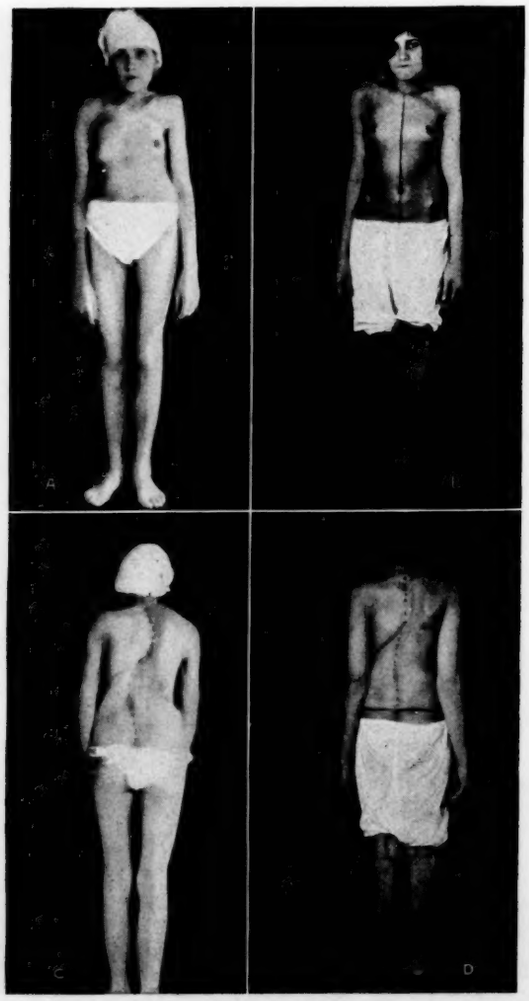

Fig. 4.—Appearance before and after operation: *A*, anterior view before operation; *B*, anterior view after operation; *C*, posterior view before operation; *D*, posterior view after operation.

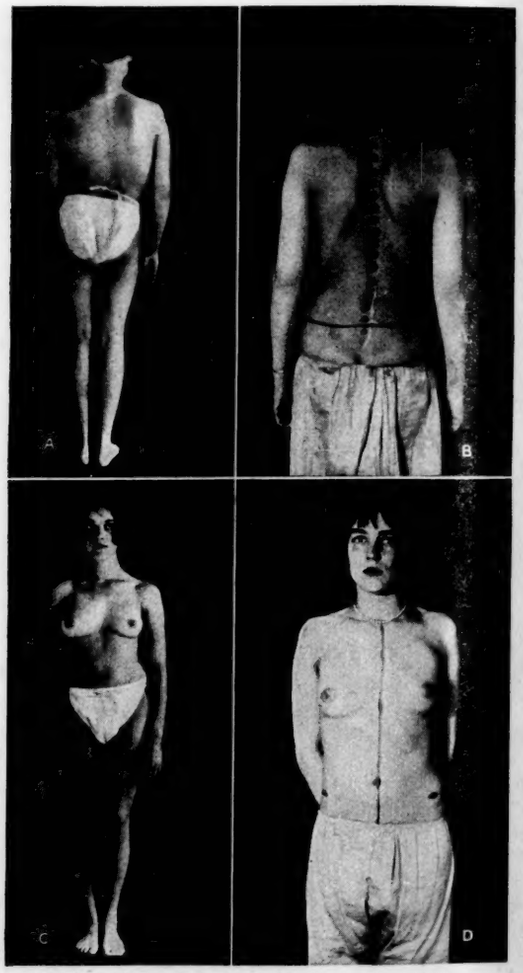

Fig. 5.—Appearance before and after operation: *A*, posterior view before operation; *B*, posterior view after operation; *C*, anterior view before operation; *D*, anterior view after operation.

In my private cases, I found that 70 per cent of the patients were females; 63 per cent [3] of the cases were idiopathic curves, and 27 per cent were due to anterior poliomyelitis. The average age of the patient when seen was from 10 to 16 years. They were seen on an average of three years after observation of the deformity and were under treatment on the average of three and seven-tenths years. Seventy-three per cent were diagnosed as severe curvatures with marked rotation, 13 per cent were moderate and only 14 per cent beginning; 70 per cent were designated as primary right

3. Mitchell, J. I.: The Etiology and Treatment of Scoliosis, Arch. Surg. **16**: 686 (March) 1928.

dorsal, 11 per cent left dorsal and 6 per cent undesignated. An accurate summary of the results of treatment in cases reviewed from private practice is difficult and unsatisfactory because of the lack of roentgen check and follow-up records. It is well to note that 83 per cent of these patients when seen had severe or moderate curves; the patients, on the average, did not report until three years after curvature was first noticed, probably four years after onset.

My study of the state cases relative to sex, the average age of the patient when seen, duration of deformity when admitted, severity of deformity and the predominant type of curvature corresponds in the main with my statistics from private practice. The duration of observation in state cases is longer, and the anterior poliomyelitis curvatures are greater. Since 1925 at the state hospital we have attempted to standardize the care of patients with curvature, relative to etiology, musculature, vital capacity, types of curves, roentgenograms, photographs and treatment. All patients with curvature, unless otherwise designated, are given exercises directed toward improvement of the curvature. After a period of physical therapy, the cases are again checked and a decision is made as to the course to be pursued, namely, conservative or operative; as a rule, conservative treatment is given a trial—including a support and a program of exercise. It is surprising how early curves will improve and weak muscles become strong under physical therapy; frequently a relapse after discharge from the hospital is due to carelessness and indifference at home which probably could be controlled under a follow-up system by trained workers.

In 1926, I began a study of several corrective methods; namely, corrective plaster jackets and traction. Twenty-five patients were treated with a modified Lovett and Brewster[4] cast. Twenty patients had traction applied, the majority on a convex frame with head and pelvic traction;[5] a few patients had lateral traction as well.[6] In comparing these methods it was felt that wedging, while more laborious to the physician, is perhaps the most rapid and efficient. This is especially true in mid dorsal and low dorsal curves. It was also observed that the degree of effectiveness of either method varies inversely according to the amount of rotation present. Overcorrection or even complete correction has not been realized. Relapse follows after removal of the corrective force; the rapidity with which it follows varies with the amount of correction obtained.

In order to obviate the relapse that almost all agree invariably follows after removal of the corrective force, I felt that, in operative cases, it might be possible to perform the operation through a plaster cast by means of a window. Thus, the following plan was evolved: After maximum correction had been obtained, as demonstrated by roentgen examination, the wedging plaster was removed and immediately the patient was suspended with lateral and contralateral traction. A light, specially reinforced cast was applied in which a posterior or operative window and an anterior or respiratory window were cut, to be later removed. A roentgenogram was taken to check the operative field. At operation both windows were removed, the operative field was carefully walled off, and the operation performed, a combination fusion graft procedure being done. In all cases this cast has proved a valuable adjunct. It has prevented preoperative relapse, allowed operative freedom and facilitated postoperative care. These patients were more comfortable than a similar group in which no cast was used. While used in only six cases, this procedure, I believe, if given a trial will prove a means of preventing at least in a good measure relapse after forced correction.

4. Lovett, R. W., and Brewster, A. H.: Treatment of Scoliosis by Different Method from That Usually Employed, J. Bone & Joint Surg. **6**: 847 (Oct.) 1924.
5. Whitman, Royal: Observation on the Operative Treatment of Scoliosis, J. Orthop. Surg. **3**: 330 (July) 1921.
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OPERATIVE RESULTS

Our operations are all too recent to exhibit results; no operation was performed prior to 1925. I respect operative procedure and have resorted to it only after study and deliberation in each case, in all of which conservative treatment had been given. Failure to obtain fusion has been experienced, and on several patients operations have been done a second time. Various degrees of operative shock have occurred in some cases. This has been greatly controlled by preoperative preparation, improved operative technic and postoperative transfusion. While the manifestation of shock is undoubtedly a criterion of operative skill and technic, I believe that in a measure it is often associated with decreased vital capacity due to cardiac and respiratory impairment. In severe dorsal curvature cases we have found that the vital capacity is reduced from 40 to 50 per cent of normal.[7] The work of Lemon and Moersch,[8] also of Churchill and McNiel,[9] suggests a relationship between decreased vital capacity and operative risk.

SUMMARY

1. Scoliosis, I believe, is still an open problem; opinions, procedures and statistics of results vary within wide limits.

2. The majority of patients consult the orthopedist from three to four years after the onset and already have severe curves with structural changes, thoracic distortion and secondary cardiac and respiratory injury that is irreparable.

3 .The problem and result of treatment of the early curvature as compared to the advanced curve is analogous in a measure to that of an incipient and advanced case of pulmonary tuberculosis. Early diagnosis and prevention should be the slogan of the profession. Education of the laity, cooperation of all medical groups, and complete routine examinations during childhood is important.

4. Conservative treatment if possible should be given a thorough trial, under supervised physical therapy. Standardization of roentgen technic as photographs are being standardized will make a check for comparison of progress more accurate.

5. Operative procedure has a definite place in the treatment of scoliosis but is not a solution to the problem. It requires skill; it is not without danger, and patients with severe dorsal curvatures as a rule are poor operative risks.

6. Corrective treatment of the deformity before operation should be attempted; if force is used, prevention of relapse can be aided by the use of an operative cast.

222 West Fourth Street.

7. Flagstad, A. E., and Kollman, Sara: Vital Capacity and Muscle Study in Scoliosis, J. Bone & Joint Surg. **10**: 724 (Oct.) 1928.
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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. KREUSCHER AND FLAGSTAD

DR. NATHANIEL ALLISON, Boston: Those interested in possible primary causes of scoliosis and in the invention of methods to offset these primary causes will do well to visit Dr. Eben J. Carey's exhibit in the Scientific Exhibit. Dr. Carey shows how the musculature of the body has much to do with the development of the skeleton. In scoliosis we are surely dealing with a growth disturbance, and one that is so profound that once established it cannot be entirely corrected. But we do not see these cases in our present state of enlightenment until they are established. What then? Both Dr. Kreuscher and Dr. Flagstad answer this, Dr. Kreuscher more positively than does Dr. Flagstad. Dr. Kreuscher has recommended pulling the spine out to as straight a position as possible and then using wide fusion as a method of stabilization. This is perhaps the best we can do until that time when unrotation of the scoliotic spine is possible. Dr. Flagstad recommends all the things that should be done. We fail in early diagnosis as a profession, he says, and this is true. We fail, he says, because we attempt correction of early curves and then allow our patients to relapse, and that too is true. Scoliosis is one of our major problems, as orthopedic surgeons.

DR. ARCHER O'REILLY, St. Louis: I wonder sometimes whether the mechanics of scoliosis is always as complicated as we try to make it. It seems to me that when we put lateral pressure on a vertebra that is softened in some way and is in a plastic state, it gradually oozes out and we naturally get a rotation. The vertebra squeezes out from the point of pressure. The pressure is on one side and something has to give. It is a very slow process, usually, and rotation takes place away from the side of the pressure. That does not help us in our method of treatment. We must find out why rotation occurs and then how to derotate. Derotating a structural scoliotic spine is the essential thing in being able to treat it correctly and to correct deformity. We are far from that at present, and I suppose that the only thing we can do now with our present knowledge is to try to correct as much deformity as we can, and also to try to prevent the deformity. The prevention of deformity would seem at present the most important step in the treatment of scoliosis. We should be able to recognize the condition in its early stages, for when the deformity is great, one can do very little to correct it. We can probably prevent the development of deformity by corrective jackets in its early stages, by exercise to correct and strengthen the muscles, and so on. Possibly, in a certain number of cases, improvement can be secured or the deformity can be prevented from progressing. There are cases in which the deformity is so great, and the musculature has been so much injured, as in infantile paralysis and other conditions, that we cannot hold the spine. In these cases we have to use fixation, as has been recommended by the speakers.

DR. C. B. FRANCISCO, Kansas City, Mo.: I feel that we have been fooling ourselves a good deal about the correction of scoliosis. All of us will admit that we cannot correct true scoliotic curves. Most of us will admit that we cannot improve a real curve very much, particularly after the growing period. There is one point that we have not thought enough about, and that is, that these curves occur rapidly. At least, that is my observation. The process is somewhat akin to that in bow legs or knock knees; the structural change takes place within a few months, and then any increase which occurs after that is the result of the growth, which is more or less the normal growth in the distorted position. Therefore, my notion about the prevention of curve is to do it early. When teaching my medical students I try to get them to concentrate on this fact in the case, and also that the bodies are soft. Therefore the chief indication is to take the weight of the thorax off those soft bodies until nature has a chance to harden them. Another point is that there are some general body deficiencies that we do not understand. Therefore, these patients need general hygienic care, sunshine, fresh air, and that sort of thing. My instruction is to put such children to bed for about six months, just as if the child had a broken femur, and during that time nature is going to harden the process, and then direct the growth of the children as long as they grow. I further tell students that there are two indications for operation: One is for the relief of ligament strain in the fixed curve, that is, in the curve that does not change its structural attitude as a result of pressure; the other is for the relief of conditions such as are found in poliomyelitis. After the bone hardens, the curve is not going to get worse. I am heartily in accord with Dr. Flagstad's method of treatment. I have seen Dr. Kreuscher's cases. These were advanced cases and one had the choice of operating or of condemning patients to the lifelong wearing of braces, but I do not believe that one can operate practically in these cases.

DR. H. H. MARKEL, San Francisco: I am sure that most orthopedists will agree that early cases are the only ones in which the condition can be helped by physical therapy. Later cases are prevented from growing to an extreme condition only by forcible correction and then spinal fusion. Dr. Flagstad and Dr. Kreuscher have hit on a similar procedure, that of trussing and bracing in a jacket, with traction and reapplication of a new jacket within two weeks after operation. I believe that I have secured still further correction in similar cases. Dr. Flagstad stated that in almost all these cases advanced tuberculosis of the lungs will develop. Up to about fifteen years ago pulmonary tuberculosis was increasing everywhere. There was no cure for the advanced cases, but when emphasis was placed on public education and early eradication of the disease, with the establishment of preventoriums all over the country and the use of certified milk, tuberculosis began to disappear. The same course of action will cause the disappearance of scoliosis. When parents are taught to look at the backs of their children and not at their faces, after they get old enough to take a bath for themselves, and when the general medical profession is taught that advanced scoliosis cannot be cured but must be endured by spinal fusion, scoliosis will disappear. The wider spread of gymnastic work in the public schools will result in a great deal of prevention. By the time the girls reach high school and physical examinations are made either by the physical education director or by orthopedists selected for that purpose, scoliosis has already started in many cases. I feel that the children in the grade schools should be examined before they are 10 years of age. Only by so doing shall we prevent these cases from growing to scoliosis.

DR. E. J. CAREY, Milwaukee: Scoliosis is not predominantly a bone disease just of the spine but may be reflected as a functional and growth imbalance of the thorax as a whole, the spinal column, the ribs, the sternum, and the musculature that is related to the thorax. That has been brought home to me by a series of experiments. I did not have scoliosis in mind at the time. The experiment was primarily to bring out the various types of growth conditions brought about by decompression. If it is true that the various muscles of the body that act on the growth plates are primarily the factors that create the pressure which leads to the growth or lengthening of a rib, a body vertebra, or one of the other long bones, then, if we decompress that growth plate, we are eliminating essential factors. I was not so much interested in scoliosis of the spine at the time; I was primarily interested in what took place when the costal cartilages of the pectoralis major were removed. What I did was to create a functional imbalance in the growth of the thorax. Then it was a case of doing it bilaterally, and again the relationship was not so marked as when the unilateral elimination of the pectoralis major took place. Then the condition is more or less uniform on both the left and the right side. What happens in the condition of scoliosis produced experimentally in this particular way? What really has been brought about is a functional and a growth imbalance of the thorax as a whole, and the scoliosis is nothing more than an index of that.

DR. E. C. BULL, San Francisco: One point has not been stressed. It is interesting to live at a time when the advisability of a surgical attack on poliomyelitis is readily admitted by all. At first the group considered candidates for such treatment was rather a restricted one, those who could not possibly get along with braces or other conservative assistance. Gradually that group has increased in size. I believe it will continue to do so until many of the cases now considered under proper control and thoroughly compensated as the result of conservative treatment will be included in the surgical group and handled

surgically. I venture that suggestion because from time to time I see adults who are just coming into what might be called the arthritic period, in whom symptoms, often entirely disabling and frequently a great source of annoyance and disability, are appearing. I believe it has been admitted that no normal spine results in scoliosis, even if existing early, for any considerable period of time, no matter what the treatment is. That means that the stress is on the soft parts, and irregularly distributed groups of muscles or ligaments are subject to more severe strain than they are normally constructed to withstand. As the child passes the five or ten year period of observation, which we generally accept as a proper period for the presentation of cases after treatment, he comes into a period when his work demands prolonged strain on these ligaments, or he has to stay in one position for a long period of time, or he approaches the period when arthritis makes its appearance. I believe that if the ordinary case which is considered compensated as the result of conservative treatment will be followed five, ten or fifteen years, in almost every instance it will be found that the patient has annoying and probably disabling symptoms. Fatigue which would be noted in the young is not so impressive or so disabling as that which appears later. I believe that our operative class will gradually increase and spread.

DR. H. D. BARNARD, Los Angeles: To us it has seemed, with remarkable frequency, that a very definite increase in the curve often occurs at, or just before, the period of puberty. In a number of the children that we have had under observation since early childhood, this retrograde change has occurred in spite of fairly ideal treatment. We have noticed this in both operative and nonoperative cases. This fact has so impressed us that we consider it highly advisable to check up by routine physical examination and comparative roentgenograms with unusual frequency at this time. The amount of preoperative improvement is in direct proportion to the efficacy of the traction. I have a slide which shows the eccentric arrangement of the overhead bars over which the gravity traction spool is arranged. The sliding spools allow of considerable freedom, deep breathing and stretching, immediately following which the gravity pull is reestablished in its corrective position. I believe that by the proper arrangement of the overhead bars and gravity traction pulls, it is possible to encourage a derotation of the spine through the same arc in which it occurred. We use both longitudinal and lateral traction, believing the latter to be the more important. We find it difficult to apply and maintain a brace of actual corrective nature. It is often even difficult or impossible to find a patient who will accommodate himself to the discomfort sufficiently to maintain the correction stationary. The gravity traction has proved the most effective method in our hands.

DR. K. R. WERNDORF, Council Bluffs, Iowa: I should like to say a few words on the principle of traction. If one has a stick and that stick is deformed, does one ever think of correcting it by pulling? One takes the stick and bends it the other way. Why should we try to apply extension and traction under curvature if the curvature must be corrected by sideways shifting? If the deformity has been caused by pressure, the pressure, of course, must come afterward; in other words, derotation, but not under extension or traction; rather derotation with sideways shifting and correcting.

DR. P. H. KREUSCHER, Chicago: In reply to Dr. Werndorf's question as to why we use extension, I would say that by extension we can overcome muscle spasm and can actually elongate the patient's body by straightening out the curves. One of my patients was 3½ inches taller after six months of traction and forcible correction than before the treatment was begun. After traction has been applied and we have obtained the maximum amount of correction, our next problem naturally is fixation and maintenance of that correction. We do not expect to accomplish the impossible, such as the correction of a derotated spine or the correction of a fixed curve. Every one knows that unless some type of internal or external fixation is applied, the curvatures, especially in paralytic cases, will recur. In our operation we make an effort to fix the entire spine. This fixation begins in the upper thoracic vertebrae and extends to the lower lumbar. Three of our patients have been without any type of fixation for more than six months. Two have returned to work and have shown no recurrence as far as we are able to determine. For twelve years it has been my practice to perform the operations on the spine through an opening made in the plaster casts. The 24 inch film of the spine which I have shown will give a view which cannot be obtained on smaller films. The graft shows plainly during the first six or eight weeks after the operation; then for about three months it shows faintly because it is undergoing a structural change. After the eighth or tenth month it again shows as a firm, bony strip.

DR. A. E. FLAGSTAD, St. Paul: I believe the efficiency of any forced corrective measure depends on the degree of rotation present. We have used head, pelvic and lateral traction very similar to that demonstrated. Three cases in which this method was used were quite severe curvatures with marked rotation. In each of these cases an average at least 100 pounds total traction was used. They were under treatment on an average of eight months, during which time continuous traction was maintained and roentgenograms were taken at monthly intervals. At the end of this period a comparison of the roentgenograms showed comparatively no change. On the other hand, we have had cases with little rotation that have responded to traction. Our experience has been that rotation is the determining factor in any forced corrective method. I am much interested in Dr. Carey's remarks. It seems to me that his work in a measure might explain cases of scoliosis we sometimes see following surgery of the thorax. This interrelationship between the bony framework, muscle and ligamentous attachments is most interesting.

THE INTRODUCTION OF NEW DRUGS*

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AND
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[EDITORIAL NOTE.—This paper, together with the papers of Dr. Stoner and Dr. Leake, concludes the symposium on intravenous medication, new drugs and the clinical value of drugs, serums and vaccines. In our last issue we published the papers of Dr. Keith, Dr. Irons and Dr. Kinsella.]

In the past, when medical schools taught much about drugs and little that was scientific about the action of drugs, physicians were inclined to look to the pharmaceutic "detail man" for instruction in the use of medicines. In those days, the development of a new proprietary medicine was usually a rather unconventional procedure. The firm having decided to put out a new product for a given disease, a search of the therapeutic index of dispensatories was made for a number of drugs said to be "indicated" in the determined condition. A number of these were combined so that, in the lingo of shotgun remedy promotion, "each component might add to the beneficent action of the other," and the pharmaceutic department did the rest. Sometimes an obliging physician presented the firm with a ready-made combination, which he felt and which he had taught did marvels in rheumatism, gonorrhea, asthma or syphilis. The result of this process, hailed as a discovery, was given a catchy name, therapeutically suggestive by preference, and members of a suffering allegedly scientific profession were supplied with free samples for clinical trial. Then physicians, probably under guidance of the detail man, who had a persuasive tongue with a smattering of medical knowledge, were instructed in the use of the product and in due time, as a return for the free samples, rendered laudatory if unconvincing reports of the

* Read before the Section on Pharmacology and Therapeutics at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

things done by this new addition to the medical armamentarium. Perhaps the physician might be induced to publish his favorable clinical trials in some medical journal sorely pressed for copy. Such articles, reporting clinical trials, were not uncommonly published over the signature of one connected with the firm who could append "M.D." to his name; such M.D.'s could be hired then—and probably now—at no very high salary.

A new proprietary having thus been evolved and launched, liberal advertising did the rest. Such advertising assured the interest of the medical journals receiving slices of the appropriation, and thus was a safe protection from any unfavorable comment on the product which might be sent for publication by those who had experienced undesirable or negative effects from the use of the drug. In some instances those in control of medical journals that were hard pressed and not over particular might even take the price of the advertising out "in trade" and then induce hospitals with which they were connected to purchase the stuff and use it on patients. An authentic example of this sort of thing is found in a letter which was sent to the Council as evidence for the therapeutic value of a certain mixture. The letter is written by the editor of a medical journal now happily extinct. After lauding the preparation, the letter states in part, ". . . you would get better results if you would take a page ad in . . . a page is $100 and if you would take that I would take it [here occurs the name of the product] and use it in the Infirmary Clinics where it would be seen by a large number of physicians and would get them using it in their practice."

CREATION AND WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY

Commercial domination of therapeutics was the primary cause for the creation of the Council on Pharmacy and Chemistry. In addition to the question of judging advertising offered to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the question of determining whether a drug mentioned in a paper submitted for publication was scientifically established caused the editor, Dr. George H. Simmons, much concern. At the time the Council was created, Dr. Simmons adopted the principle of excluding from the reading as well as from the advertising pages of THE JOURNAL reference to therapeutic agents not reported on favorably by the Council—that is, of not accepting any article for publication recommending for use any preparation not described in the U. S. Pharmacopeia, the National Formulary or New and Nonofficial Remedies. This program was a decided step forward. It soon received the support of many physicians, who refused to give consideration to a new therapeutic agent until it had been submitted to the Council or until it complied with provisions of scientific background established by the Council. Such action was for the protection of the practicing physician as well as in the interest of the public. It was subject to the drawback that those who wished to follow the Council hesitated to use the newer products even in an experimental way. Further, it sometimes delayed the publication of papers which presented an honest and worth-while effort toward the advancement of therapeutics by the study of a new medicinal agent.

Ten years ago, the Council adopted the policy of issuing preliminary reports on products which were attracting attention while still in the experimental stage. Since then the Council on its own initiative, or on request, has examined the evidence for new drugs not yet on the market. Requests for such consideration are given attention if received from the firm which contemplates the introduction of a new product; from the person or persons who have evolved a new drug and wish the Council to examine the available evidence; from the editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; from the editors of the special journals of the Association, or from the officers of sections of the Association. In these cases, the Council seeks to verify the composition of the product and to determine on adequate tests and standards for insuring identity. It passes on the acceptability of the name proposed for the product, making recommendation, if necessary, in regard to the adoption of an acceptable name. It inquires into the adequacy of the laboratory studies, determining whether the bacteriologic or pharmacologic investigations are sufficient to establish expectation of the usefulness of the product in its proposed field and whether the clinical experiments made after promising laboratory and animal experiments warrant the claims for the proposed actions and uses of the product.

When these conditions are satisfactorily fulfilled, the Council issues its report, which reviews the evidence and indicates the conditions under which confirmatory clinical trials should be carried out. When such a report is issued, the physician who contemplates a clinical study of the drug concerned may undertake it with full assurance that he is building on solid ground—is working with a product of definite and nonsecret composition, the probable value of which is supported by adequate preliminary investigation.

Each year a larger number of requests for such preliminary consideration are received by the Council. This is due no doubt to an increasing realization on the part of the medical profession that even when a drug is the result of studies carried out by careful, conscientious and competent investigators without commercial connection there is the danger that the investigator's enthusiasm has influenced his judgment; and, further, that even when the product is the work of a commercial organization of the highest standing there is the danger that the scientific staff may be influenced by the commercial atmosphere of competition. For these and kindred reasons, an increasing number of physicians refuse to consider new drugs even with view to controlled experiment and study until they have assurance that such study is worth while.

Furthermore, the cost of introducing a new drug has become so high that manufacturers are loath to launch an addition to the materia medica unless they have a fair assurance that the vast sum of money which must be spent on its introduction will give such return that the venture will not be a financial loss. When one remembers reports of the vast sums paid for the rights to successful proprietaries, this conservatism on the part of the drug houses is understandable.

It now seems safe to assume that extensive advertising campaigns for worthless or unscientific drugs will not be attempted, and, if the attempts are made, they will not be satisfactory. Nevertheless many nostrums and worthless products are still foisted on the profession and the public in a small way, principally by manufacturers who are concerned with deriving a livelihood from the exploitation of a single, or of one or two specialties or preparations. Quantities of such worth-

less or harmful preparations are still being used to the detriment of the medical profession and of the public health. Most disconcerting in this respect is the ease with which a preparation of indefinite composition or of definite secrecy can still be perpetrated on some thoughtless physicians who have not been adequately trained in such fundamental subjects as chemistry and pharmacy, or who have neglected to keep abreast of progress in these basic sciences. Not long ago, a sodium cacodylate preparation proposed for intravenous use in syphilis obtained some vogue through indefinite statements suggesting to the untrained that an improved arsphenamine product was available. In discussing this preparation, an editorial in one of the progressive state medical journals stated that "a physician who uses a remedy the composition of which is kept secret, even in part, is not doing his duty to his profession or to his patient. It is almost criminal for physicians to use a preparation of secret composition and to administer it intravenously—a method which in itself is altogether likely to give rise to accidents."

CONSIDERATIONS GOVERNING THE INTRODUCTION OF A DRUG

In introducing a new drug, probably the two essential considerations most often overlooked by the investigator are (1) chemical composition and (2) controlled clinical evidence.

The A. M. A. Chemical Laboratory has had a large experience in connection with chemical composition. It is difficult to make the medical public "chemically minded." As a result, every year the chemists of the American Medical Association read clinical reports representing weeks and months of labor which, on close inspection, are without scientific value because the investigator did not know the nature of the preparation with which he was working. Even some of the best minds in clinical medicine err occasionally in this respect. Some years ago, a paper was presented at the annual session of the American Medical Association extolling a new drug—or, rather, a new use for an old drug. THE JOURNAL, on the recommendation of the section officers, was asked to publish the paper. In the paper there were two paragraphs on tests and standards, but when subjected to the scrutiny of the chemists the tests were found not workable. Fortunately, publication was withheld until the chemical information was placed on a sound basis, and the literature was saved from further misstatements.

The great urge for pharmaceutic concerns is to have a proprietary form of a popular drug. Concerning bismuth compounds, for example, the literature is replete with reports on their use in syphilis. The most generally used drug is a complex tartrate of bismuth. Two years ago, a firm submitted, under a proprietary name, a preparation said to be sodium tetra-bismuth tartrate. On analysis of the material, the laboratory was unable to find evidence warranting the firm's claim. The product appeared to be the well known sodium tri-bismuth tartrate, with a little bismuth oxide, probably an impurity. In good spirit the firm agreed to market the product in conformity with the laboratory investigation; today, instead of a "newly" discovered bismuth preparation, the physician has a reliable and good brand of the well known and tried sodium bismuth tartrate. Notwithstanding the complexity of the bismuth compounds, of which bismuth tartrate is one, investigators, largely on their own initiative, are today making comparative therapeutic tests of various bismuth compounds and presenting the so-called scientific results before scientific bodies. In the case of a number of these products, the investigators do not know with what they are working, because the manufacturer himself does not know what he has. Obviously, therapeutic deductions from such evidence are bound to be misleading.

Another example of the lack of proper chemical investigation and control concerned itself with the introduction of ephedrine—this time a nonproprietary product. Almost every one recalls the veritable hysteria associated with the introduction of ephedrine. Some physicians were obtaining good results with a certain dosage of ephedrine salt; others required more of the drug; still others could not obtain results comparable with the claimed properties of the drug. The Chemical Laboratory intervened in this situation. It found that, in the hurry of pharmaceutic dealers to be of service to the profession, products of various degrees of composition and activity were being rushed on the market. Ephedrine is capable of forming four isomers. It is the levo-ephedrine on which the clinical evidence is based. After considerable study, the Chemical Laboratory evolved standards for levo-ephedrine. Today practically all manufacturers in America are supplying the product according to these standards. While this situation is in itself commendable, the necessity which demanded the criticism should not be forgotten. To be considered in this connection is the amount of so-called research undertaken without scientific basis, because investigators did not know the potency or chemical identity of the ephedrine products with which they worked.

A popular form of proprietary today is developed by taking two well known drugs in fixed proportions, such as barbital or one of its derivatives and amidopyrine, heating them until they melt and then introducing the resultant mixture as a new substance. In every instance that has come to the attention of the A. M. A. Chemical Laboratory—and practically every manufacturer has one or more such preparations—the products are mixtures, though there may be some evidence of slight compound formation at the fusion point. To the chemist, it would appear more scientific to prescribe the hypnotic and analgesic in the respective doses indicated rather than to accept a manufacturer's statement that the proprietaries are definite chemical compounds, which they are not. Even if they were compounds, the criticism would be just as apropos because in the digestive tract they would break up into the two original compounds.

The picture, on the whole, is far brighter today than it was in 1905. Investigators state their appreciation not only of knowledge concerning the general character of the new drug but also of a complete quantitative statement of composition. Pharmaceutic firms of the better sort are introducing new drugs of definite composition and purity. The scientific staffs of these firms are to be commended for their increasing influence in insisting on drug standardization before pharmacologic or clinical trial. Repeated instances indicate that continuous supervision is necessary, particularly when the manufacture of a product is changed from laboratory to factory scale. Surprises come with the best of firms; for example, not one of the many brands of dextrose ampules submitted to the A. M. A. Chemical Laboratory passed the first examination. Now all of them which have been accepted are apparently under good control by the manufacturers, as a result of construc-

tive criticism by the laboratory of the American Medical Association maintained by the organized medical profession.

SUMMARY

What, then, are the fundamental considerations in the introduction of a new drug or preparation?

1. The composition must be known, including adequate evidence of composition and molecular structure. Impurities must be eliminated by appropriate tests. An approved method of assay is necessary in order that pharmacologic and clinical work may be comparable. In case of biologic products, other methods of control and assay must be substituted as, for instance, "insulin units."

2. The action on experimental animals should be studied by a competent pharmacologist. This is important not only for information regarding the various actions of the drug but also to determine whether trials in man are warranted.

3. The crucial test of a drug is carefully controlled clinical experimentation.

Often after a drug has shown promise of considerable merit, it has been introduced through the wrong channels. Many a substance has suffered because the promoters have announced the discovery and discussed the therapeutic use through the daily press rather than presenting the claims, supported by scientific data, through proper scientific mediums which have a clientele capable of judging therapeutic evidence.

The selection of a proper name is important. The name should be indicative of the chemical composition. The medical profession justly looks with suspicion on a product which has a therapeutically indicative name. When the generic chemical name is too involved for practical usage, a coined contraction is quite in order; as an example, barbital for diethylbarbituric acid.

Progressive salesmen of drugs find it to their advantage to make conservative claims for a new drug; most of them present their new additions to materia medica to the official body appointed by organized medicine to inspect the competence of the evidence and to pass on the status of new and nonofficial remedies.

Finally, the clinician, who is not primarily a laboratory investigator, may again be reminded that it is not safe to use a drug until it has been found acceptable by the Council on Pharmacy and Chemistry. Acceptance insures a careful inspection of the chemistry, pharmacology, clinical evidence and method of marketing of the preparation. It is not safe to use in the human body a preparation of unknown composition, of unknown potency or of doubtful dosage or a preparation the claims for which have not been established by scientific unbiased evidence.

The Patient's Respect.—Respect and reverence should beget its kind. It is not alone the privilege of the patient to respect and revere his doctor but it is to his distinct advantage to cultivate that feeling. This does not mean that one may not seek other medical counsel; it does not even imply absolute faith in all that his doctor does, but it does demand that as a patient he respect all the doctor advises, accepting it as given for his best interests. When the patient uses his prerogative of refusing to act upon certain advice, he should do so kindly and not clandestinely. This takes no cognizance of that smaller coterie of physicians who feel that, when a patient has once consulted them, they have a lifetime claim upon him and are aggrieved if he consults another; we can dismiss that narrow-mindedness without consideration.—Kerr, Le Grand: Respect Your Physician, *New York State J. Med.*, Sept. 15, 1929.

THE CHAOS OF INSTITUTIONAL DRUG THERAPY AND MANAGEMENT OF PATIENTS*

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The unsatisfactory state of drug therapy, which is not in keeping with the developments of modern scientific medicine, is apparent to every medical man who has hospital responsibility. This state of affairs has been a football of discussion down through the years and no apparent satisfactory solution has been effected. The discouragement of polypharmacy in the last few decades, the developments in diagnostic medicine and the rationalizing of all forms of therapy have tended to lessen the evils but have not cured them entirely. With the discarding of old remedies, the use of which has been perpetuated by inheritance and the value of which has been founded in empiricism, new and often untried remedies have taken their place, so that the pharmacy of the average large hospital has not decreased its invoice of drugs and preparations of various kinds for the treatment of disease. Repeated efforts have been made to control this unsatisfactory situation in various hospitals by attempting to limit drug therapy to certain selected drugs and by listing certain drugs and combinations of drugs that shall have preference in the treatment of disease in a given hospital. Such a plan has not borne fruit; physicians have disagreed in a given institution on the selection or importance of drugs and the drug list recommended has not been the drug list generally used. It must be admitted that in the past there has been a better excuse for disagreement than in the present, for the reason that drug therapy was formerly more largely a matter of personal opinion on the part of the physician than is generally true today. Progress in pharmacology, better diagnoses and more efficient hospital professional service have tended to eradicate the old abuses often founded on opinions rather than on facts as represented by well proved indications.

A letter was written to forty well known hospital physicians in this country and Canada in which two questions were asked: Should effort be made to standardize institutional therapy? Are present conditions wholly satisfactory as applied to drug therapy and patient management in our best regulated hospitals? The replies represented interesting and instructive discussions. There was a rather general agreement, in which I share, that standardization of drug therapy is not desirable, especially if this is carried to an extreme; that drug treatment of a patient must mean individualization largely, and that a certain plan of drug treatment at one time might not prove to be the best plan for the same patient with the same disease at another time. The diet is more subject to standardization, but even diet must be flexible to meet the needs of the particular patient of a group of patients with a particular disease. The composite of these discussions was that irrational drug therapy should be eliminated and useful drugs for a given institution might be determined by a committee functioning over a period of time, which committee would observe the efficacy of certain drugs and make recommendations from time to time.

* Read before the Section on Pharmacology and Therapeutics at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

The matter of drug therapy is just as irksome to the hospital pharmacist as it is to the physician. He finds himself surrounded with an ever increasing number of drugs, proprietary and otherwise, many of which have had little use, and are prescribed infrequently or not at all. This abuse is most manifest in the large general hospital with an open staff. With the advances of modern scientific medicine there has been a voicing of a fear on the part of a few that therapeutic nihilism will rob medicine of the advantages of therapy. If therapeutic nihilism is gaining ground it is not apparent to me, and I have recently given some attention to this problem.

There are two fields of therapy that to my mind represent outstanding abuses, the one old and somewhat empiric—I refer to the multitude of drugs being prescribed in the modern practice of dermatology—and the other, somewhat new, which is an outstanding abuse —the loose therapy in the presumed endocrine disturbances. Physical therapy in its various forms as applied by cults and faddists has suffered a great abuse. Hospitals should make an effort to standardize this form of therapy.

Routine management of the patient even in the best regulated institutions has often been guided by the rule of thumb. It was the general opinion expressed in the replies to the questionnaire that rational management of the patient has suffered neglect and effort should be made to standardize such factors as rest, encouragement of elimination and nursing care. A common neglect is failure to give emergency care to the patient on admission to the hospital in that period of time in which a definite diagnosis is being determined. It has been suggested that some routine, inoffensive therapy should be instituted until definite indications for therapy can be determined. It has been suggested also that more routine attention shall be given the psychic factor not only in the diagnosis of disease but in the management of the patient.

I must agree with Dr. Roger Lee in his address as chairman of this section last year that "the too implicit acceptance of any standard leads inevitably to blind and unintelligent labor of the treadmill type and to discouragement of initiative, inquiry and originality." Prof. W. A. Puckner, secretary of the Council on Pharmacy and Chemistry of the American Medical Association, said in his reply to the questionnaire:

> I have felt for many years that something should be done to bring about a rational use of drugs in hospitals, and in taking up the matter with a number of physicians closely associated with hospital work I have gained the impression that little had been done. In general it appeared that those in charge of hospitals considered the use of drugs of minor interest. For one thing I have been urging that rules be adopted which will prevent the haphazard prescribing of drugs of unestablished value. In line with such a plan I have suggested that the hospital pharmacist be given instructions to honor prescriptions for drugs included in Useful Drugs or in the U. S. Pharmacopeia without restriction; that he supply drugs included in New and Nonofficial Remedies if the order is countersigned by some one in authority; and that he refuse to supply other drugs except on authority of the head of the hospital or some superior officer.

Dr. Franklin C. McLean of the University of Chicago stated in his discussion that he had been especially interested in the problem for a number of years and that he had established a formulary at the Peking Union Medical College Clinic which was accepted by the staff as representing the remedies that would be prescribed. He stated that this formulary had undergone a number of revisions. He further stated that he was making an effort to do the same thing at the University of Chicago, but that the project was as yet to be accomplished.

Incident to the opening of the new St. Luke's Hospital in Cleveland, in December, 1927, I became interested in this problem; and, while nothing definite has been done to simplify drug therapy in the hospital we hope to have taken from our drug shelves such proprietaries as bromidia and other highly advertised compounds. I have found in making a survey of the drugs and chemicals used in the different professional departments that approximately 200 were listed, whereas Useful Drugs has listed 246. The invoice of drugs in the pharmacy of St. Luke's Hospital showed drugs, vaccines and serums numbering more than 700, quite a large percentage of which are used infrequently and do not call for special indications.

Experiences in the World War represent a striking example of the chaos of drug therapy, where medical men were brought together in practice in great numbers, such as peace-time medicine does not afford. As staff consultant at a base hospital center in France, I was brought into intimate contact with a large group of medical men whose training and ideas of therapy were considerably at variance. We were able to demonstrate that the acutely ill can be managed rather satisfactorily with little or no medication aside from cathartics during a period when we were without a supply of drugs in managing a thousand soldiers whose illnesses were largely acute diseases, such as influenza and respiratory infections. The war service was an outstanding example of the impracticability of standardizing drug therapy in the general practice of medicine. The great variety of opinions about the value of drug therapy arising from differences in training and experience was made evident in the World War army service. The same difficulty must apply in a lesser degree to a hospital group when there is a lack of uniformity of training and ideals. As stated in one of the replies to the questionnaire:

> Variation in the use of drugs by different clinicians may be based on good reasons but generally results from indefinite knowledge as to the best treatment. Useless variation in drug therapy increases inconclusiveness and vagueness of clinical results as an index to therapy. Chaotic methods of therapy are like any other sorts of uncontrolled experimentation; they do not foster reliable advances in the knowledge of therapy. Clinical evidence of results from drug therapy is unsound and misleading because of many variables. The least and perhaps the most that can be done is to control one variable and draw conclusions from uniform treatment procedures. The ideal standardization of drug therapy is to standardize the physician's knowledge of the use of drugs. This cannot be hoped for in this diagnostic age and the next best attempt toward uniformly good treatment is to direct the therapy in individual institutions in the light of the combined knowledge of the staffs.

Well regulated institutions make comparisons of results which will help to lessen chaos and indefiniteness in the treatment of disease. For example, I have been recently interested in the value of a high carbohydrate diet in pneumonia in the form of orange juice, other fruit juices, and glucose. Whether this treatment is specific or not, recovery has resulted in severe pneumonia when the prognosis appeared unfavorable. Such a plan of treatment of pneumonia pursued by a number of institutions would be not only of interest but also of constructive value.

It is to be hoped that some systematized effort will be made by the hospitals of the country to correct the

perpetuated abuse of hospital drug therapy as well as patient management, and that the interns serving the hospital will be given more systematic instruction in drug therapy as applied to various groups of patients suffering from disease.

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THE PHARMACOLOGIC EVALUATION OF NEW DRUGS*

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One of the objects of this symposium is to arouse physicians to an appreciation of the various factors involved in the development of new chemical compounds for medical use. An important aspect of the discussion should be the focusing of attention on the rational clinical use of these new agents, as based on sound and unprejudiced pharmacologic evidence rather than on empiric trial at the suggestion of interested commercial concerns.

Intense and undignified commercial rivalry, as well as great interest in synthetic organic chemistry, is continually forcing the clinical use in diagnosis, therapy or prophylaxis of new substances without a reliable scientific background. Seriously compromising the growth of rational medical practice, such procedures may induce another wave of "therapeutic nihilism." These commercial efforts, however, are too often successful through the operation of rather obvious means: (*a*) the relative inactivity, and therefore nontoxic effect, of the various materials; (*b*) the undetermined *vis medicatrix naturae,* and (*c*) the credulity of too many physicians.

The introduction of worth-while new chemicals for use in medicine requires the close cooperation of three distinct types of scientific endeavor—chemistry, pharmacology and clinical study. No one is qualified to undertake the task single handed. Few institutions are properly prepared to do so. Several suggestions have been made[1] regarding the promotion of this sort of cooperative research among disinterested noncommercial laboratories of university or institute caliber. The success of such undertakings in this country has been demonstrated in the prompt evaluation and subsequent extensive clinical use of such agents as ephedrine, ethylene, insulin, the phthalein diagnostic dyes, sulpharsphenamine and tryparsamide.

The promptness and satisfaction with which these materials have been introduced into general clinical use has been due in large part to the comprehensive, reliable and highly critical pharmacologic studies which were published before the agents were offered for medical trial, and which clearly indicated their toxicity and mode of action and suggested their worthiness in medicine. Physicians could furthermore trust the initial clinical reports on these preparations because they were based on unbiased observations carried out under controlled conditions at university or research hospitals.

From such experiences it is hoped that our commercial pharmaceutic houses may profit. To them medicine owes a great debt in assuming heavy financial risks in the promotion of new medicinals. It is suggested that these concerns avail themselves more fully of the facilities of university pharmacologic laboratories for the critical evaluation of new substances produced in their chemical plants. Such an arrangement might be profitable in many ways. The company would be assured of careful and unbiased judgment on the pharmacology, toxicology and worthiness of clinical trial of their new preparations while the pharmacologic laboratory might secure much needed help in the prosecution of more strictly scientific problems. Many drug firms make the mistake of believing that their chemists can furnish trustworthy pharmacologic opinion. Indeed, some eminent chemists, impatient with careful pharmacologic technic, have ventured to estimate for themselves the clinical possibilities of their own synthetics. Into what simple errors such efforts may lead may be judged from the case of a prominent chemist who, in trying to show the relative local anesthetic efficiency of a series of compounds, reported on what was their relative narcotic action on free-swimming goldfish.

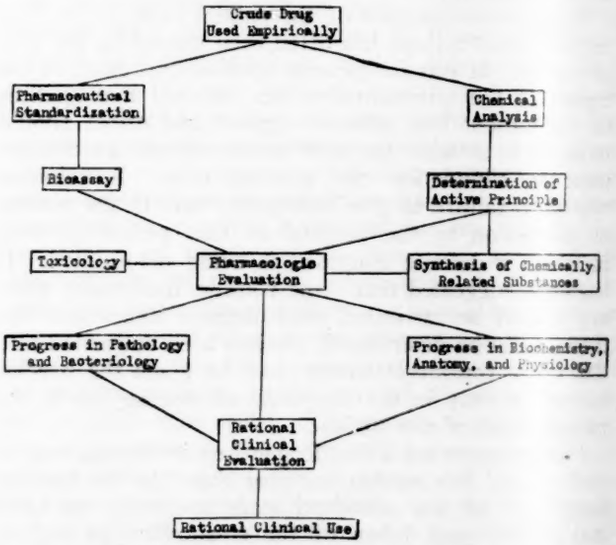

Fig. 1.—Logical and historical position of pharmacology in the rational use of chemical agents in medicine.

Clinical trial of new chemical substances should be made only after critical disinterested pharmacologic study has estimated (*a*) the probable toxicity, (*b*) the type and mode of action, (*c*) the worthiness of application to human beings and (*d*) the reasonableness of replacing existing drugs. There is no short cut from chemical laboratory to clinic, except one that passes too close to the morgue.

PHARMACOLOGIC EVALUATION

The pharmacologic appraisal of new drugs is a difficult and often tedious process. From the chemical composition, clues may sometimes be obtained as to the probable toxicity and type of action. While the pharmacologist is usually not a chemist, he must have a keen sense of the different kinds of effects various types of chemicals have on living tissue. With such knowledge he may suggest helpful ideas to the synthetic chemist. There are many valuable generalizations bearing on the relation of chemical constitution to

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* From the Department of Pharmacology, University of California Medical School.

* Read before the Section on Pharmacology and Therapeutics at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

1. Abel, J. J.: A National Institute for Drug Research, J. Indust. & Engin. Chem. **10**: 969 (Dec.) 1918. Loevenhart, A. S.: An Institute for Research in Synthetic Organic Chemistry, ibid. **10**: 971 (Dec.) 1918; Future Chemotherapy, ibid. **18**: 1268 (Dec.) 1926. Leake, C. D.: Cooperative Research, A Case Report, Science **62**: 251 (Sept. 18) 1925.

pharmacologic action. Three simple examples may be cited: (*a*) with increase in the number of carbon atoms in a straight chain there is an increase in toxicity and intensity of action ("Richardson's law"); (*b*) only those aromatic arsenicals are liable to injure the optic tract in which there may be an amino or substituted amino group in the para position to the arsenic,[2] and (*c*) the levorotatory forms of optical isomers [3] have the greater effectiveness. It is the function of the pharmacologist to investigate and determine other such generalizations which may be applied by the chemist in the synthesis of new medicinals.

On receiving a series of new compounds, the pharmacologist should first study the toxicity of the different members of the series. This requires a large number of animals and much patience. It is astonishing how unreliable and meager toxicity figures are even for standardized preparations. The minimal lethal dose (killing three out of five) depends on many factors, among which are (*a*) species, (*b*) condition of animal, (*c*) solvent and concentration, and (*d*) mode and rate of administration. It takes considerable experience to control these variables in order to arrive at sound estimates.

From this preliminary work the pharmacologist may get some idea of how the agents act. This must now be systematically investigated. The action on different organs of the body may be studied in isolation experiments. The mechanism of general systemic effects may be elucidated by observations on blood constituents, circulatory and respiratory activity, central nervous system and muscular response, glandular and alimentary action, kidney and sexual function, and general metabolism. The experiments may be acute or greatly prolonged. The fate in the body and rate of destruction or elimination should be determined. Special actions must be studied, sometimes by complicated or special technic, which may be standardized, as in the case of antiseptics [4] or antisyphilitic drugs.[5]

Most of these observations may be quantitative. One may then estimate quite satisfactorily the relative efficiency in equivalent dosage of the various members of the series. The ratio of this efficiency to the toxicity may be taken as an index of the probable medical value of the particular compound. This method has been successfully applied to the evaluation of several series of antisyphilitic drugs and of the local anesthetic series of procaine derivatives.[6]

From the calculation of the relative therapeutic indexes of the members of a series of compounds, one may choose those which give most promise of success in medical practice. Here ease and cheapness of manufacture, as well as ease of dispensing, play a large rôle. Consequently the pharmacologist's choice may be modified by the chemist's and pharmacist's opinion.

Before venturing to clinical trial, one should submit the selected substances to study in regard to their action on normal human beings. Meanwhile the toxicology of the compound should be reinvestigated in order to ascertain local irritating action, delayed pathologic effect or other deleterious results. In this way not only may dangerous agents be excluded from human use but also, in the case of certain valuable remedies with untoward side-actions, the clinician may be prepared to know what functions to watch for possible injury and to stop administration before harm results.

Very few medicinals come to clinical trial with such preliminary study. Those so developed from noncommercial sources have received prompt and usually justifiable attention. The old method of drug houses of gross exploitation to physicians with exaggerated claims while shirking or evading the publication of disinterested pharmacologic evidence is coming to be recognized as bad business, as witness the Bayer 205 fiasco. These companies may not have the pharmacologic organization to develop new drugs in an ideal manner. Perhaps it is better so, for the output of such laboratories would not be above suspicion, as a glance at some such research indicates. The proper pharmacologic evaluation of new chemicals may be secured from cooperating university laboratories. With favorable publications from such sources, the commercial concern would have little trouble in getting ample and satisfactory clinical trial.

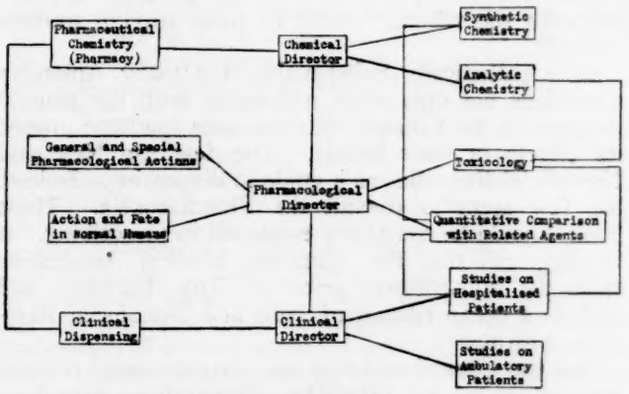

Fig. 2.—Division of labor in the introduction of new chemicals for diagnostic, therapeutic or prophylactic use in medicine.

CLINICAL EVALUATION

The contributions of chemistry to medicine are of the utmost importance [7] and are becoming more significant daily. It is expedient for both chemists and medical men to keep in mind the function of the pharmacologist in mediating their relations. It is lamentable not only that chemists and drug makers do not seem fully to recognize the services pharmacology may render, but even that many medical schools, in subordinating the discipline to biochemistry or physiology, fail to realize its value in the support of rational medicine.

To the same extent that he is not a chemist, the pharmacologist is not a clinician. The pathologic factor in the sick human being may profoundly alter the character of the drug action of which he has talked so glibly. Pharmacologic evaluation of new drugs is a necessary preliminary to rational clinical study, which should proceed under controlled conditions in research hospitals. The final evaluation of any new medical agent is a clinical problem.

Ideally, then, a new chemical should not be offered for general use to physicians until favorable reports on

2. Young, A. G., and Loevenhart, A. S.: The Relation of the Chemical Constitution of Certain Organic Arsenical Compounds to Their Action on the Optic Tract, J. Pharmacol. & Exper. Therap. **23**: 107 (March) 1924.
3. Cushny, A. R.: Biological Relations of Optically Isomeric Substances, Baltimore, 1926.
4. Anderson, J. F., and McClintic, J.: Bull. 72, Hyg. Lab., U. S. P. H. S., 1912.
5. Wakerlin, G. E.; Lorenz, W. F., and Loevenhart, A. S.: A Proposed Standardized Method for the Therapeutic Study of Compounds in Experimental Rabbit Syphilis, J. Pharmacol. & Exper. Therap. **26**: 187 (Oct.) 1925.
6. Schmitz, H. L., and Loevenhart, A. S.: A Study of Two Series of Procaine Derivatives, J. Pharmacol. & Exper. Therap. **24**: 159, 167 (Sept.) 1924.
7. Hirschfelder, A. D.: Influence of Chemistry on Pharmacology and Medicine, J. Indust. & Engin. Chem. **15**: 455 (May) 1923. Stieglitz, Julius: Chemistry in Medicine, A Cooperative Treatise, New York, 1928.

it have been published from trustworthy chemical, pharmacologic and clinical sources. Conversely, physicians are not justified in using new medicinals in their daily practice until such reports have reached them. But the average physician cannot be expected to follow the detailed reports of current pharmacologic and clinical experimentation. What is to be his guide in judging the claims of clever advertising and detail men with respect to new chemicals proposed for medical use?

NEW AND NONOFFICIAL REMEDIES

The self-sacrificing Council on Pharmacy and Chemistry of the American Medical Association has been the most significant factor in developing the present high standard in America of drug usage. By the establishment and maintainance of New and Nonofficial Remedies it is performing a mighty service for American medicine, not only in guaranteeing a minimum of scientific background for the clinical use of accepted articles but also in furnishing a minimum standard for business houses to follow in promoting new medicinals. Most reputable companies in this field now attempt to cooperate with the Council in introducing new agents. It is thus effectively protecting American manufacturers and physicians from the bizarre conglomerate of drug propaganda which fills not only the advertising pages but even the reading matter of most foreign medical journals.

It is pathetically unbelievable that many American physicians not only seem unfamiliar with the general program of the Council but even seem apathetic toward its efforts in their behalf. Too few use New and Nonofficial Remedies as a guide in dispensing. Indeed, too few seem to consult the Pharmacopeia. These books should be constantly employed in prescribing. It is suggested that the American Medical Association raise the subscription price of THE JOURNAL and include a cheap edition of New and Nonofficial Remedies with it.

But the Council and even the pharmacopeial revision committees are not infallible. Preparations have been approved by one or the other which have no scientific justification in medicine. More critical examination of the claims made for many agents admitted to New and Nonofficial Remedies would reasonably exclude them. The greatest offense is the admission of substances slightly modified chemically from some well recognized and often official agent, without satisfactory evidence that such modification has improved the therapeutic index (ratio of efficiency to toxicity). The exploitation of these unessential modifications [8] at outrageous prices smacks of silvering a penny to pass for a dime. On the other hand, preparations for which more than the usual amount of favorable critical evidence exists have been denied the obvious advantage of Council approval.

While the Pharmacopeia and New and Nonofficial Remedies should be the general dispensing guides for the average physician, he should not accept them as the final authority in the face of his own or his colleagues' experiences. They are the most useful guides now existing for aid in rational prescribing. If a newly proposed chemical agent for medical use is not described in these books, it should not be employed by a physician until he has carefully assured himself of the soundness of its scientific background, chemically, pharmacologically and clinically. By thoughtfully using official drugs and the well developed ones admitted to New and Nonofficial Remedies, a physician can do far "more for his patients than by listening to the specious pleadings of the detail man." [9]

SUMMARY

The general position of pharmacology in the critical evaluation of drugs, new or old, is shown graphically. The rational introduction of new drugs requires the close cooperation of chemists, pharmacologists and clinicians. Reliable pharmacologic study is necessary in the development of new drugs to estimate (*a*) toxicity, (*b*) type and mode of action, (*c*) worthiness of application to human beings and (*d*) reasonable replacement of existing drugs. Clinical evaluation should be made under controlled conditions in research hospitals. Physicians should not use new drugs in daily practice until favorable reports from such sources have been published in reputable journals.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. KEITH, IRONS, KINSELLA, PUCKNER AND LEECH, STONER AND LEAKE

DR. LESLIE T. GAGER, Washington, D. C.: Two years ago before this section I presented some observations on the use of potassium sulphocyanate in hypertension, and as a result of that work I have had some personal experience with regard to the introduction of a new drug. In this case the drug, of course, was of definite known composition, and its pharmacology and physiologic action had been carefully studied, especially by Westphal, whose work was reported in the German literature in 1924 and 1926. As a result of several years of clinical work with hypertension, I had accumulated a group of patients who might be said to have a hypertensive pedigree, in whom the results, or the lack of results, with various forms of treatment were known. Thus, in what had to be a practical clinical problem, certain of the scientific requisites were met. The favorable effect of sulphocyanate aroused the interest of physicians throughout the country. A further response was in the form of the advertising of several pharmaceutic houses. Incidentally, the difference between the retail prices of the drug houses and the actual cost of sulphocyanate made we regret at times that I did not have a proprietary interest. On the scientific side, we have continued to get favorable results in perhaps 75 or 80 per cent of patients selected with reasonable care. The literature now contains the results in perhaps 700 cases, most of which are favorable to the hypotensive action of sulphocyanate. I noted the other day, however, that the Council on Pharmacy and Chemistry had denied an application for the admission of one preparation to New and Nonofficial Remedies. Perhaps one reason is the lack of sufficient evidence of its specific worth, but a second reason given was that in most cases of hypertension a reduction in the blood pressure is of doubtful value. Without too much pride of opinion I venture to predict, in view of the changing attitude of the last decade toward hypertension, and a better understanding of its nature, that the future will show that the reduction of high blood pressure along fundamental physiologic lines is of utmost value in prolonging the life and comfort and efficiency of hypertensive patients.

DR. JOHN RAUSCHKOLB, Columbus, Ohio: My answer to the question in one of the last papers that was read is "yes." I am a general practitioner. I write my own prescriptions. Whenever I prescribe for my patients every article on that prescription is followed by U. S. P. and I have never had any trouble. I used to see on the records at the hospital such names as I. Q. S. and so on. Of course, I knew what that meant and so did the nurse, but the official English names, it seems to me, are the ones to use on the charts.

DR. W. F. DUTTON, Amarillo, Texas: The recent advances in chemistry in relation to medical practice are little short of miraculous. As pointed out in the chairman's address, the

8. Barbital and Unessential Modifications, editorial, J. A. M. A. **84:** 445 (Feb. 7) 1925.

9. Henderson, V. E.: Newer Drugs, Their Use and Abuse, Canad. M. A. J. **16:** 1077 (Sept.) 1926.

speculative and the practical application of science are growing closer and closer together. A great deal of this scientific, and I might say ultrascientific, work is due, first, to a knowledge of applied chemistry, and later to the application of chemotherapy. The indication, as some of us see it, for intravenous therapy is to insure the rapid effect of the agent employed; to prevent change of the chemical composition of the drug before it enters the blood; to avoid irritation; to bring the medication in direct contact with the organisms in the blood, as streptococci, the spirochetes of syphilis, and the bacteria of other allied diseases, and to apply chemical and biologic antitoxins. It is also used to secure a high concentration of an agent in the blood without injury to the organism. There is safety, apparently, in the absence of contraindications. It often determines success or failure. The practice should not be abused; it should be used with a definite purpose in mind. There are many present who are familiar with hydrogen ion concentration. It has made possible some of our greatest advancements in chemotherapy, and it is necessary in the application of intravenous therapy. A general knowledge of chemistry is necessary; also a thorough knowledge of chemotherapy. The endocrines are purely a regulating system for a great many medicaments introduced into the system. It is well to have a knowledge of basic physical phenomena. A knowledge of these facts would make the theoretical dangers of intravenous therapy quite plain. There is one matter that should be taken up by this section, the dissemination of a fuller knowledge of pharmacology and therapeutics. The teaching of pharmacology and therapeutics is sadly neglected. Recently in a county society of some seventy-five members, the members were asked to give the therapeutic and physiologic effect of five commonly used drugs, and out of that number only two could answer the question.

DR. ALEXANDER STERLING, Philadelphia: I was very much interested in the paper on vaccine and serum therapy. I should like to ask Dr. Kinsella why he condemns stock vaccines in general. Did he have a check-up of clinical results in his work? Did he have some patients in whom he expected certain improvements and did not obtain those improvements; in other words does he think stock vaccines are not good from an academic or a practical standpoint? Is there any difference in Dr. Kinsella's opinion about the use of stock vaccine and the use of autogenous vaccine? Is autogenous vaccine of more benefit as compared with stock vaccine in his experience? Dr. Keith spoke against intravenous injections. Does that apply to any kind of drug used intravenously or to certain kinds of drugs? In respiratory infections, especially chronic bronchitis and asthmatic bronchitis, there is a great deal of intravenous medication used, such as distilled water, afenil and calcium. Are those drugs of any value? Does Dr. Keith sometimes find extra benefit derived when drugs are used intravenously as compared with when they are given by mouth?

DR. P. J. HANZLIK, San Francisco: In theory, assessing the value of drugs is quite simple, but in practice it is difficult. It is not new, for it was used by the pharmacist Sertuerner 125 years ago when he discovered morphine. Besides scientific data, there must be a large measure of good judgment and also honesty. In regard to "Intravenous medication," there are those who would have us think that this is a separate department of medicine. As a matter of fact, the intravenous method is only one of several methods of administering drugs, to be used only when no other method can answer the purpose. Dr. Keith pointed out the favorable aspects, but he recognizes the dangers from the indiscriminate use of drugs intravenously. Physicians should consider the fundamental nature of the changes in the blood and other tissues following intravenous injections in order to appreciate the dangers that exist. The physical and chemical changes which have been demonstrated may be marked or comparatively small, but they are widespread and result in modifications and disturbances of important physiologic functions. It is convenient to think of the disturbances as occurring in two phases. First, there is the immediate effect of the intravenous injection, the result of introducing a foreign body. This effect is not specific. It is the same for quite a variety of agents, physically and chemically different. The symptoms are recognized as the "shock" reactions occurring sometimes after the injection of arsphenamine, frequently after vaccines and various colloids. These reactions result from disturbances in the colloid equilibrium of the blood, and should always be kept in mind by physicians before resort is had to intravenous injection. The changes may cause sudden or early death. The second phase represents the more typical or specific action of the drug and is generally different from the immediate effect after injection; it is derived from an action on some specific tissue or organ, or from some chemical product of the drug. The proposal made by Dr. Stoner is interesting and important. I believe a more specific proposal than merely the control of materia medica products is desirable. Every properly organized hospital today has a pathologic service which checks up on the end-results of disease, but systematic, scientific checks on therapeutic practices on the patient, while he is still alive, virtually do not exist. We ought to have a person who has a pharmacologic background and clinical experience assigned to this special work in the clinical services. He could evaluate the results of the methods that are in use, and also test new and proposed remedies under controlled conditions. The results, when properly analyzed and systematized, would materially assist the teaching of therapeutics.

DR. A. G. YOUNG, Cambridge, Mass.: I should like to bring out one or two points. One concerns the past experience of having introduced a drug, and the sad experience of attempting to get other people to give it a thorough trial before presenting it to the Council. In this particular instance, we spent considerable money in having the drug made and sent it to about fifteen of the leading internists of the country, all of whom had previously said they would be glad to try it out. I believe about 5 per cent actually gave it a trial, and the others placed it on the shelf or put it in the wastebasket. Consequently at the time the Council was ready to act on the drug they had very little information, except what I had given them. There were one or two favorable exceptions which were of assistance. This makes me believe that we made a mistake in expecting or asking men who are busy with their own research to take their time to go into something that is essentially different. In two or three instances, when the drug was actually tried out clinically, it was done by younger men who were interested in that particular phase of study. I believe that people who wish to introduce new therapeutic substances should offer them to persons who are interested in their own phase of the work, and that those who accept them should try to work with the investigators in an unbiased way, regardless of their preformed ideas. Another idea brought up by Dr. Leake concerns the great necessity for further knowledge in chemotherapy. There has been a tremendous amount of work done in this field, very little of which has been published. Investigators do not like to publish negative results, and consequently experiments have been repeated with exactly the same results. Dr. Loevenhart used to talk at times about the necessity or value of a publication (which he called the "graveyard") in which these negative results could be tabulated so that other research workers could ascertain what had been done and not repeat the unsuccessful experiments of others. I believe it would be extremely valuable if some brief form of statement could be made and this information compiled in a publication for those who are interested in chemotherapy.

DR. H. B. MYERS, Portland, Ore.: Dr. Leake has suggested that it would be highly desirable if New and Nonofficial Remedies could be placed in the hands of every physician. The best time to make a physician acquainted with the activities of the American Medical Association in getting rid of nostrums and in standardizing drugs is during his course as a student, in medical school. It would be most desirable and time well spent for each medical school to have some place in the curriculum devoted to acquainting the student with what has gone before in this regard, and advising him to help carry on and maintain the conditions that have been brought about by the American Medical Association. The chairman's address was one that we may all heartily support. There is definite danger, if we can judge from the list of drugs advocated for intravenous therapy in the circulars of manufacturing houses, of being swayed by the possibility of giving 5 cents worth of medication for $5, provided it is given intravenously rather than by mouth. While there is a definite field for certain drugs administered intravenously, the position of intravenous therapy

would be damaged by overemphasis placed on medication by vein in the case of drugs that are just as well given by other channels.

DR. C. D. LEAKE, San Francisco: In connection with the history of intravenous medication I should like to refer to the work of Johannes Elscholtz in 1667. He published diagrams of the injection of materials into the veins of animals and of man, actually studying in animals arsenic and opium, and describing their effects correctly. He also showed the method by which transfusions could be carried out from animal to man, and from man to man. I want to emphasize that the final word with regard to any agent used in medicine is the result of long clinical evaluation. I am reminded here of a story. A teacher was required to point out the harmful effects of alcohol to her class. Doing her duty she said that a litter of puppies was divided in half; one half were fed daily with alcohol and the other half had no alcohol. In two weeks' time the half that were fed alcohol lost weight and were about to die, while those which had received no alcohol were gaining in weight. She said, "Children, what does that teach us about alcohol?" Little Henry replied, "This teaches us that alcohol is bad—for puppies." That is exactly the relation of the pharmacologist to the clinician; he can tell one that alcohol is bad for puppies, but he may not know a thing about what it will do to human beings. Let me again emphasize Dr. Young's remarks, which indicated the need of therapeutic institutes. I think that this section should publish in its minutes Dr. Loevenhart's paper on a therapeutic institute, and I sincerely trust that it may recommend to the Association the annual distribution of New and Nonofficial Remedies along with subscriptions to THE JOURNAL.

DR. P. N. LEECH, Chicago: In reply to the question concerning the distribution of New and Nonofficial Remedies, it is not practical, as was suggested, to issue New and Nonofficial Remedies as a supplement to THE JOURNAL. This was tried in the early days of the Council but was soon discontinued. The Council, however, does furnish class A colleges with sufficient copies of the current volume of New and Nonofficial Remedies for use by their senior students, or possibly the junior students, or for whatever course the dean decides the book is best suited as a collateral text. I should like to say on behalf of the Council that there is no group of men (they all work without remuneration with the exception of the Secretary) which serves the science of medicine more diligently than the Council on Pharmacy and Chemistry; nor is there a group which realizes more the importance of well controlled therapeutic research. The Council really appreciates constructive comments. To such a body, helpful suggestions and comments are welcome. If any one feels that the work of the Council will be benefited or improved by certain suggestions, he should not hesitate to communicate them to the Secretary. I should like also to emphasize that in the files of the A. M. A. Chemical Laboratory and of the Council on Pharmacy and Chemistry there are more than 100,000 index cards dealing with drugs and drug therapy. How much better it would be if one anticipating research work with a certain drug would first inquire concerning the status of that drug before proceeding with clinical investigation. These departments are always pleased to furnish such information as there may be in the files, on receipt of a written inquiry.

DR. R. A. KINSELLA, St. Louis: As to the clinical experience on which contemplated use of vaccines could be based, there is a rather frequent play of private opinion. The experience of many physicians will be the answer. The article by Dr. Irons in a recent issue of THE JOURNAL answers the question of the clinical value of vaccines better than I could possibly answer it by citing my own personal experience. There is a well understood foundation for the use of vaccines, but since there is no experimental evidence to show that the injection of animals with streptococci or pneumococci will cure these animals of streptococcal or pneumococcal infection there is obviously no basis for the application of such agents as vaccines in clinical practice. I might say that the word "autogenous" is usually misapplied. Correctly speaking, the word should be used to describe a vaccine which is made from the agent of the disease. For example, if a person has chronic rheumatism and has his tonsils taken out, and the tonsils are sent to a laboratory with a request that a vaccine be made, the laboratory worker most often makes a culture of a nonhemolytic streptococcus. There is no adequate proof that the particular nonhemolytic streptococcus is the cause of chronic rheumatism in that particular case, so the preparation is not strictly an autogenous vaccine but simply a vaccine from a patient, or simply a culture from a patient. The word autogenous as usually used is misleading, because it creates in the minds of practitioners the idea that here is a truly specific agent. No vaccine can be of much value until we know the etiology of those diseases for which vaccines have been and still are incorrectly used. In view of this state of the question there can be little to gain by discussing the relative merits of autogenous and stock vaccines.

DR. WILLARD C. STONER, Cleveland: I think my question in reference to standardization of therapy was misunderstood. We are all agreed that we want not only to use drugs but to standardize the use of these drugs as applied to any given disease. That is quite a different matter.

DR. N. M. KEITH, Rochester, Minn.: I think Dr. Hanzlik's opinion that intravenous medication is a method of treatment rather than a distinct form of treatment is quite correct. Dr. Leake's view is well taken, but from what I could learn, particularly after going over Garrison's evidence carefully, the scientists Robert Boyle and Christopher Wren were really the first to inject a drug into the veins of an animal, and the first drug so used was opium. Of course, I stressed the point that promiscuous intravenous injection of well known drugs is wrong in principle and practice; nevertheless we must not forget that certain patients are in need of circulating fluid, and there is still controversy as to the best method of supplying this fluid. I believe that the immediate thing needed is not whole blood, but serum or an artificial substitute solution, such as acacia, for the reason that at rest or at comparative rest normal persons, patients and animals get a sufficient supply of oxygen with a hemoglobin of 40 per cent or even less. The technic for intravenous injection must be exact, but one must keep in mind that there are conditions, such as shock, in which there is an urgent need for circulating fluid in order to save the patient's life. There are also conditions of dehydration in which it is impossible to get fluid to the tissues by any other route. We can use a solution of sodium chloride, just as Latta did a hundred years ago, or a convenient solution of dextrose. We know that certain drugs cannot be given satisfactorily by the intestinal tract. Does it seem right that those drugs should be absolutely abandoned because they have to be given by vein? A good example of the manner in which our physiologic and pharmacologic views may change is afforded by previous and present methods of treatment in pernicious anemia. Until recently transfusions played a large part and they did benefit the patient temporarily. Now with our newer knowledge of the therapeutic effects of extracts of the liver and of vitamins, we know that transfusion is practically never used in the treatment of this disease.

Physician and Patient.—A specialist who is content solely with repairing that particular line of pathologic disarrangement which happens to fall strictly within his specialty often loses the advantages of a broad outlook on disease and on human conduct. To restore vision, to remove a crippling deformity, to relieve pain, are beautiful; but there should also be some interest in endeavoring to give courage and a better outlook on life. The most inspiring thing is not necessarily the formal printed or spoken word, but conduct. I have been helped more by observing patients who were suffering from diseases that they knew were hopeless and yet were cheerful and unselfish than by any sermon or essay. It is often the privilege of the surgeon in his contact at the time of the patient's mental stress and strain before and after an operation so to influence him, possibly by little suggestions or by sympathetic interest, as to raise his ideals or in some way to make his outlook on life better than it was before. This may be just as important as the management of the physical welfare of a patient.—Horsley, J. S.: Modern Methods of Preoperative and Postoperative Treatment. *J. Indiana M. A.*, October, 1929.

NONDERMATOLOGIC DISTURBANCES DURING CONTINUED TREATMENT WITH PHENOBARBITAL*

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Toxic effects following medication by phenobarbital, or phenylethyl barbituric acid, were soon reported after its introduction, at least sixty articles on this subject having appeared from 1912 to 1928. A survey of two additional series of cases in which phenobarbital was administered has shown the occasional appearance of a symptom not commonly reported, which appears to be referable to the medicament rather than to the disease against which this was given. The symptom is epigastric pain, more or less constant and severe, and not responding readily to dietary therapy, alkalization or other measures. This is quite independent of any aura, such as the common "visceral one, consisting in an epigastric sensation of indescribable discomfort" (Purves-Stewart [1]).

The present survey has included two series. In the first were reviewed 1,350 consecutive cases of paroxysmal disorders in persons admitted as outpatients or inpatients to the New York Neurological Institute from March 1, 1925, to Jan. 1, 1929. In 350 of these case histories, mention was not made of treatment by phenobarbital; in 978, phenobarbital was used without toxic effects for the period of the history; in twenty-two, or 2.2 per cent of the 1,000 cases in which it was employed, certain toxic effects were ascribed to the phenobarbital. Of these twenty-two, eight (i. e., 0.8 per cent of the cases treated with this drug) showed dermatologic intoxications. This approximates Menninger's [2] finding of 0.75 per cent, or three cases of rash in 400 cases treated. Fox [3] found two rashes in 167 cases, or 1.2 per cent.

In the first series, the one patient in whom circulatory disturbances alone were noted as toxic effects of this drug had cardiac palpitation and an irregular pulse when its dosage exceeded his tolerance. Neurologic disturbances in twelve cases followed patterns familiar in subacute or chronic intoxications; viz., aggravation of paroxysmal seizures, drowsiness or lethargy, mild confusion, mild agitation and defective memory (questionably due to the drug). The one case of gastric disorder resembled those to be described in series 2.

The second series comprised 240 cases of paroxysmal disorders (all the histories available) in outpatients treated during the six years from 1923 to 1929 at the United States Veterans' Hospital in New York. Of such outpatients as were also inpatients for a time during that period, the inpatient history was scrutinized in addition. In ninety-three of these histories, phenobarbital was not mentioned; its use was noted in 147 cases, in 128 without toxic effect, and in nineteen with certain effects that were deemed toxic.

In series 2 the relative frequency of toxic reactions taken together was about six times as great as in series 1. Also, when signs of intoxication did appear, in series 2 they were eight times as likely as in series 1 to include gastric symptoms. The patients in series 1 were wandering from clinic to clinic, and many of them were observed only for a few weeks; all the patients in series 2 had been observed intermittently for from four to ten years (by the Veterans' Bureau or the United States Public Health Service, but not that long at the outpatient department of the United States Veterans' Hospital, Bronx, N. Y.).

The two series are dissimilar in many ways; they are not at all comparable case for case, but of their differences the principal one seems to be that patients in the second series were exposed for much longer periods to effective doses of phenobarbital. These patients had more ample opportunities to develop toxic reactions; symptoms not commonly associated with phenobarbital poisoning might become apparent.

Cases have been reported in which the severity of an acute phenobarbital intoxication was sufficient to explain gastro-intestinal symptoms merely as responses to an irritant, not necessarily specific. Farnell [4] in 1913 described such a symptom-complex in a patient who took 13½ grains (0.9 Gm.) of phenobarbital and 3 grains (0.2 Gm.) of barbital in four hours, and six hours later showed gastro-intestinal disturbances accompanying typical ataxia, dysbasia, paraphasia, hyporeflexia and dilated pupils. A more clearly specific effect may be deduced from the two following reports. Zimmermann [5] in 1920 reported one case of acute poisoning following four 0.3 Gm. doses (18½ grains). The patient awoke after seven hours' sleep and suffered from severe vomiting with dizziness and inability to stand or speak. While the other symptoms cleared up in a day or two, nausea persisted for a week. Phillips [6] in 1922 reported an acute intoxication (following a 12 grain [0.8 Gm.] daily dosage continued for eight days), in which a morbilliform rash, conjunctivitis and cervical adenitis were complicated by epigastric pain, with nausea and vomiting persisting for four days. Brundage [7] (1926) also observed a type of acute "semi-stuporous insomnia, with severe circulatory and gastro-intestinal disturbances," following ten days' treatment with 3 grains (0.2 Gm.) or more of phenobarbital daily. Other acute intoxications with gastric complications were collected from the literature by Schneller.[8]

Incidence of Toxic Effects

	Series 1			Series 2		
	No. of Cases	Per Cent of Phenobarbital Cases	Per Cent of Toxic Cases	No. of Cases	Per Cent of Phenobarbital Cases	Per Cent of Toxic Cases
Cases in which phenobarbital was given	1,000	100	.....	147	100	.....
Cases developing toxic reactions	22	2.2	100	19	12.9	100
Principally:						
Dermatologic	8	0.8	36.4	4	2.7	21.1
Circulatory	1	0.1	4.5	2	1.4	10.5
Doubtful, probably neurologic (insufficient data)	1	0.1	4.5	0	0	0
Gastro-intestinal	0	0.0	0.0	1	0.7	5.3
Neurologic	12	1.2	54.5	12	8.2	63.2
Secondarily:						
Gastric	1	0.1	4.5	7	4.8	36.8

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*Read before the Section on Nervous and Mental Diseases at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

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Series of cases treated for periods of years with phenobarbital were detailed by Fox [8] in 1927 and Pratt [9] in 1928, without any mention of gastro-intestinal disturbances. Nor were the latter observed in Impens' [10] early (1912) investigation of the drug's effects on animals, or in Gruber and Baskett's [11] later (1925) experimental studies.

Four instances may be cited of the gastric symptoms that appeared in the eight cases of our two series. The following patients were all men, between the ages of 26 and 33 at the time.

REPORT OF CASES

Case 1.—M. S., in whom grand and petit mal began in 1906 at the age of 15, in April and May, 1924, was receiving from 1 to 3¼ grains (0.065 to 0.2 Gm.) of phenobarbital daily; early in June he looked rather cyanotic and after three weeks more of the drug felt nauseated; it was discontinued, and a month later (end of July) he felt better generally, though the epileptic seizures continued. Phenobarbital was resumed and bromide added, but the latter was soon stopped on account of a bromide rash.

For the first five months of 1925, the phenobarbital dosage was from 2¼ to 3 grains (0.15 to 0.2 Gm.) daily, part of the time with 30 or 40 grains (2 or 2.6 Gm.) of sodium bromide added, and in June the patient again complained of frequent nausea and vomiting. In July the bromide was stopped, but in addition to gastric sedatives the phenobarbital was continued at the rate of 3¾ grains (0.24 Gm.) daily; he was then complaining of epigastric pains occurring about two hours before dinner. The dose was reduced to 2¼ grains (0.15 Gm.) and maintained at that level for another six months, or until January, 1926, when the pains again became acute, continuous and "sticking" in the epigastric region, and the medication was reduced to 1½ grains (0.1 Gm.) daily, with improvement in gastric symptoms under appropriate treatment.

This alternating of cumulative gastric pains, nausea and vomiting, under prolonged administration of phenobarbital, with their relative improvemnt (and simultaneous exaggeration of epileptic seizures) after discontinuance or reduction in the drug, was still going on in 1928, four years after it was first noted. In 1927 a series of gastric roentgenograms was reported negative, and in 1928 another roentgenogram (of spine and pelvis) was also negative. There was no evidence of syphilis and the blood Wassermann reaction was also negative.

Case 2.—G. O., in whom grand mal began in 1918 at the age of 21, was given phenobarbital from the beginning, and in 1923 he was noted to be complaining of occasional pains in the stomach. The phenobarbital dosage at that time was 1¾ grains (0.11 Gm.) daily or more. He was given bismuth, and rhubarb and sodium bicarbonate, also a special diet, but some days later was still complaining of the same gastric pains. It should be added that other signs of intolerance to this drug, viz., a fairly constant moderate cyanosis of the face and one episode of phenobarbital rash, were noted throughout 1924 when he was taking between 2¼ and 4¼ grains (0.15 and 0.28 Gm.) daily.

Case 3.—F. E., in whom grand mal commenced in 1917 at the age of 21, had cyanosis toward the end of 1924, throughout 1925 and again in 1926.

In January, 1927, after at least two and a half years' constant use of phenobarbital, the patient complained of considerable pain over the gastric region. He was then receiving 2¼ grains (0.15 Gm.) daily, and his dose had varied between 1¼ and 3 grains (0.08 and 0.2 Gm.) over the time stated. A transitory paranoid tendency had been noted in August, 1925.

Case 4.—F. S., in whom grand mal began in 1917 at the age of 27, was given three-fourths grain (0.05 Gm.) of phenobarbital daily in December, 1924, and from ½ to ¾ grain (0.03 to 0.05 Gm.) daily (a relatively small dose) for the next six months. In February and March, 1925, he complained of constipation, in May of a "funny taste in the mouth" and regurgitation of sour material, and in June of constipation (unless corrected by physics) and a sour and raw feeling in the mouth after eating.

COMMENT

It will be seen that the daily dosages in these cases were generally below 3 grains (0.2 Gm.) and none above 4¼ (0.28 Gm.) at the highest. Pratt's [9] experiments with the larger doses, in a series of 205 inpatients observed for three years, led to his reckoning ¾ to 1½ grains (0.05 to 0.1 Gm.) a day as small, and 3 to 6 grains (0.2 to 0.4 Gm.) daily as "moderate doses." Toxic gastric symptoms, then—if they are such—have occurred in our series following the administration of small or moderate amounts of the drug, well below the limiting dose of 12 grains (0.8 Gm.) frequently mentioned in the literature.

The study should be completed by a control series (without phenobarbital) of ambulatory epileptic patients observed over the same period as in series 2 (from four to ten years), but phenobarbital has been in such common use that this would be a practically impossible feat. From the ninety-three case histories of the Veterans' Bureau series in which phenobarbital was not mentioned, there is no assurance that it was not given elsewhere, and few such cases could have been observed at one clinic over any extended period without this drug being ordered.

The question whether identical gastric symptoms would occur in similar epileptic patients regardless of medication remains to be answered. Lennox and Cobb [12] deduced from an analysis of 423 autopsy protocols at Craig Colony that "epileptic patients show no greater degree of organic abnormality of the gastro-intestinal tract than other types of institutional patients who have not been subject to convulsions." They also quote Harryman and Donaldson's [13] gastro-intestinal roentgen-ray reports in fifty epileptic patients, two of whom (4 per cent) showed evidence of duodenal ulcer; this frequency is little less than our 4.8 per cent of patients on phenobarbital who complained of gastric symptoms. We do not know whether Harryman and Donaldson's epileptic patients had been on a regimen of phenobarbital or not. Bethea's [14] longer series of 400 cases yielded only two certain (0.5 per cent) and eight questionable (2 per cent) cases of gastric ulcer, according to the roentgenologic evidence; these patients [15] did receive 1½ grains (0.1 Gm.) of phenobarbital daily, occasionally more.

SUMMARY

A complaint of subacute and chronic epigastric pains, not commonly reported among the effects of continued exhibition of phenobarbital, has been observed in several cases in which the drug was used therapeutically over a period of years.

The relative rarity of this toxic symptom and of others is noted in two series, totaling 1,147 cases. It appeared in about 5 per cent of cases in that series longest observed under phenobarbital medication, or, in about 37 per cent of all the toxic cases in that series.

440 Riverside Drive.

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TUBERCULOSIS IN CHILDREN

A PLAN FOR PREVENTION AND CONTROL *

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In spite of the broad educational campaigns that have been carried on against tuberculosis and in spite of the marked reduction in the death rate from the disease, there is still a tremendous amount of tuberculosis. I often doubt whether there has been any striking reduction in the incidence of the disease, for one has only to institute a careful search for tuberculosis to uncover huge and often unsuspected amounts of it. Most tuberculosis surveys do not reveal the true status of the situation for the reason that there is no simple means of recognizing the disease. In the first place many mistaken diagnoses are made, and in the second place, because of the nature of tuberculosis, many individuals do not apply for medical attention until late in the disease. The result is that much of the active tuberculosis is not included in the surveys. Any means, then, which would make possible the finding of more active tuberculosis than is now being done would be of value; and of even greater importance would be some practical means of preventing the development of active tuberculosis. These two subjects will be the topic of this paper.

It is rather generally accepted that the major part of our energy in connection with tuberculosis has been spent in the care of the disease after it has developed. Care of the disease is necessary and important, but it will have relatively little effect in reducing the incidence of tuberculosis for two reasons. In the first place, it is not practicable to hospitalize more than a small percentage of the tuberculous sick and, in the second place, those who are hospitalized usually are not found until there has been a spread of tubercle bacilli over a wide area and an infection often of many other individuals. The educational value of the care of the tuberculous sick, however, should be emphasized. The establishment of sanatoriums has been the outstanding factor in this connection. The sanatorium has been, as it were, a demonstration school for such a large number of people outside of those actually treated in the sanatorium that the old attitude of hopelessness in regard to tuberculosis has largely disappeared.

It seems quite evident, then, that we must do more than care for the active disease if we wish to accomplish much along preventive lines. A great deal has been written in an attempt to educate the public in regard to the prevention of tuberculosis. This has been largely of a general nature and has served as a preliminary preparation for a more fundamental and specific attack. It is my opinion that the prevention of tuberculosis requires almost as specific a procedure as does the treatment. In other words, actual contact with the one in whom tuberculosis is to be prevented is almost as necessary as is contact in the case of treatment; and, further, prevention must begin where tuberculosis begins, and that is in children. Our method of attacking tuberculosis in children at the Vanderbilt Hospital follows somewhat the ideas originally set forth by Allen Krause, and it is being described here in the hope that it may prove a practical method of approaching the tuberculosis problem from the standpoint of prevention.

The procedure consists primarily in finding tuberculosis in children in the infection stage, and preventing the development of active disease. Finding tuberculosis in this early stage can be accomplished only through the proper use of the tuberculin test. It will be noted that no attempt is made to distinguish sharply between tuberculous infection and the active disease. In children there is no sharp line of demarcation between the two clinically, since there are no pathognomonic signs or symptoms of the beginning of activity, at least that we can recognize, and for the safety of the child we leave the differentiation vague. Of course the tuberculin test is not used alone in the study, but it is the only means we have of being certain of infection. There is some evidence that a study of the blood with the supravital technic is of additional value in this regard.

For years it has been the practice in our clinic to do tuberculin tests on as many children as we could. The routine test has been the intracutaneous injection of 0.1 mg. of old tuberculin (0.1 cc. of a 1 : 1,000 dilution). With a negative result from that amount, 1 mg. (0.1 cc. of a 1 : 100 dilution) has been given when tuberculous infection has been suspected. The intracutaneous test has been used in preference to the somewhat simpler Pirquet test because the intracutaneous test gives a much higher percentage of positive results in infected children than does the Pirquet test. The Pirquet test will give approximately 50 to 65 per cent positive reactions, while the intracutaneous test in the various dilutions of tuberculin will give practically 100 per cent positive reactions.

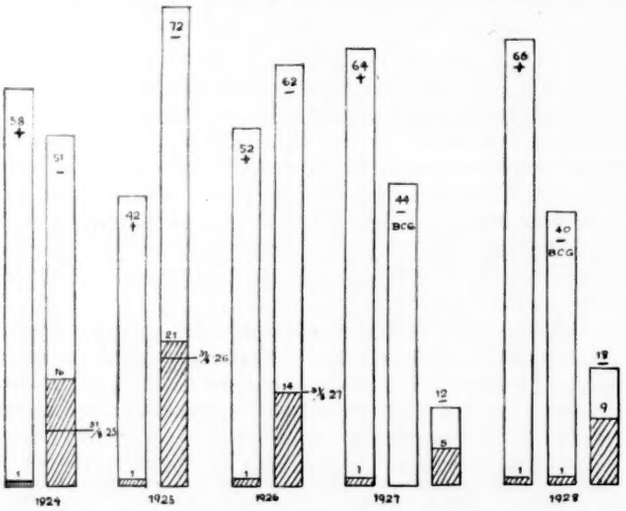
When a positive test is obtained, the history, physical examination, and x-rays especially are used to determine the extent of tuberculous involvement. It is well known that the chest examination alone is an unreliable means of getting this information. Thus we find some active and advanced tuberculosis in children, but much the greater part of it is found in the infection stage; that is, before it has produced demonstrable signs or symptoms. The active tuberculosis is treated in much the same way as one treats tuberculosis in adults. The children in the infection or asymptomatic stage are considered potentially tuberculous, and we try to give them practically the same care that any child should receive who is expected to live in a healthful manner. In other words, our idea is to care for those children in such a way as to prevent their tuberculous infection from developing into active disease. Tonsils are removed when there is an indication for their removal, dental care is given, other defects in hygiene and nutrition are corrected, and standard preventive inoculations against infectious diseases are carried out. Further, when a positive test is obtained, all the young brothers and sisters are brought in for tuberculin tests and examinations. Not only this, but all adult members of the family in whom the disease is suspected are examined in the medical clinic. It is surprising how often a previously unsuspected source of spread is located in some adult member of the family.

Thus tuberculosis in its various stages is found in the different members of the family and appropriate care is instituted. The important thing is that most of it is found in the infection stage, that is, before active tuberculosis has developed, and with relatively little effort it can be kept in the inactive stage. These infected children are the forerunners of much of the future tuberculosis, and if in most instances their infec-

* From the Department of Pediatrics, Vanderbilt University Hospital.
* Read before the Section on Preventive and Industrial Medicine and Public Health at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

tion can be kept quiescent during childhood, not only will the incidence of childhood tuberculosis be reduced but also the incidence of adult tuberculosis will be influenced in that these children will develop into adults who will have much less chance of developing the disease.

This scheme accounts for only those children who have already become infected with the tubercle bacillus, which group constitutes much less than 50 per cent of all children. These infected children are in one way safer than the uninfected ones, for it will be recalled that infection with the tubercle bacillus produces a certain degree of immunity to reinfection. What are we to do then with the larger group of uninfected children who have no immunity and who may be exposed to an overwhelming infection at any time? The well known preventive measures, such as avoiding contact with open tuberculosis and maintaining good physical condition, should be carried out, but in addition there has been offered by Calmette and Guérin a specific preventive measure in the introduction of



This chart is a reproduction of a chart of Heimbeck's. The columns marked + represent the number of nurses with positive tuberculin tests; those marked — the number of nurses with negative tuberculin tests. The cross hatched areas represent the number of nurses developing tuberculosis during their training. In 1927 and 1928 the columns marked B C G represent the number of nurses with negative tuberculin tests who received subcutaneous injections of B C G. The smaller columns marked only — represent the number of nurses who did not take B C G.

bacillus Calmette-Guérin (B C G). B C G is composed of strains of bovine tubercle bacilli which have been grown for ten or fifteen years through many successive transfers on a special medium which is supposed to have reduced markedly the virulence of the bacilli. The principle underlying the use of B C G is the introduction of these relatively avirulent bacilli into the body of the uninfected individual for the purpose of producing sufficient immunity to combat an initial infection of virulent organisms. I do not believe that the oral administration of B C G is practicable for the reason that a positive tuberculin test usually cannot be obtained following this method of administration. It is therefore unlikely that immunity is produced in these cases. Even if it were, if there is any danger associated with the administration of B C G it would seem preferable not to have the infection in the abdominal cavity. I do believe, however, that B C G used as an intracutaneous or subcutaneous vaccine offers hope of being of value as a preventive measure.

Because of our limited knowledge of B C G we have assumed a conservative attitude toward its use. We have given B C G as a vaccine subcutaneously in 0.01 mg. doses to only a few of those infants who we thought were so situated as almost certainly to become infected soon with large numbers of virulent organisms. In each instance there has resulted within from four to six weeks a small nodule under the skin at the site of injection. These nodules later involved the skin, broke down, and discharged for several weeks. There was no enlargement of the regional lymph glands. In every case between five and seven weeks after the vaccination a positive tuberculin test was obtained. The material for these vaccinations was obtained from the state bacteriologic laboratory, where the culture is maintained by Dr. William Litterer, the state bacteriologist. Dr. John Overton, city health officer of Nashville, procured the original culture of B C G. Both Dr. Overton and Dr. Litterer, who began the use of B C G in this section, have a much larger series of cases than our own. Their results have been similar to those described.

Petroff's [1] finding that there are a few definitely virulent bacilli in B C G has helped us to maintain our conservative attitude. However, the experience of Heimbeck [2] and of Wallgren [3] with B C G used as a subcutaneous and intracutaneous vaccine has made us feel that there is probably very little danger associated with its use. Some of Heimbeck's [4] results especially are encouraging. With the use of B C G as a preventive vaccine he was able to reduce markedly the incidence of active tuberculosis in the undergraduate nurses of the Ullevaal Hospital in Oslo. One of his charts showing these results is reproduced here.

An improvement which we hope to make in our technic is to determine the amount of B C G which will produce immunity without producing the small discharging abscess that has followed our vaccinations. It will be important also to determine how long the immunity lasts. These and other things we hope to learn by vaccinating some uninfected medical students and nurses whom we shall be able to follow carefully over a period of years. Until more is learned about B C G it seems safe to take the attitude that it is preferable to introduce a measured amount of relatively avirulent bacilli into the bodies of those uninfected individuals who are almost certain to receive heavy virulent infections than to take a chance on an overwhelming infection of virulent organisms with no immunity to combat such infection.

Having described in some detail the methods which we use in working with tuberculosis, I will outline and discuss a plan which could be used on a wide scale for the prevention and control of tuberculosis. Tuberculin tests could be done on all school children. When a positive test is obtained, the preschool sisters and brothers should be tested. Also, the adult members of the family should be questioned and those with suggestive symptoms should be examined in an attempt to find the source of spread. Should B C G prove of value as a preventive measure, uninfected children suitable for its administration would incidentally be located. This process of finding tuberculosis in all of its various stages would necessarily be the function primarily of health organizations.

1. Petroff, S. A.; Branch, Arnold; and Steenkin, William, Jr.: A Study of Bacillus Calmette-Guérin (B C G); I. Biological Characteristics, "Cultural Dissociation" and Animal Experimentation, Am. Rev. Tuberc. **19**: 9 (Jan.) 1929.

2. Heimbeck, Johannes: Immunity to Tuberculosis, Arch. Int. Med. **41**: 336 (March) 1928.

3. Wallgren, Arvid: Intradermal Vaccinations with B C G Virus: Preliminary Note, J. A. M. A. **91**: 1876 (Dec. 15) 1928.

4. Heimbeck, Johannes: Tuberkuloseinfektion und Tuberkulosevakzination, Ztschr. f. Tuberk. **52**: 378, 1928.

The next step would be the distribution of the care of all these individuals. Success in the prevention of tuberculosis will require the aid of the practicing physician, who is really the ultimate health officer or, at least, should be. A record of the positive tuberculin test, of the state of the child's nutrition (height, weight and age), and of the condition of the tonsils and teeth should be made. This record, including any other data that may be deemed advisable, such as recommendations, should be made in duplicate, and a copy of it should be sent to or taken by the patient to his physician, if he has a private physician. Likewise, adults in whom the disease is suspected should be referred to the private physician if they are able to have one. If the physician understands that he is to assume the responsibility for the care of these individuals, he will in all probability cooperate.

Carrying out such a plan as this would be a tremendous task, but tuberculosis is a tremendous problem and can be attacked with any degree of success only through widespread cooperation. It is bigger than any organization and is going to require many years of work. Some communities are not ready for this method of attack. A certain amount of educating might have to be carried out first. Part of this can be done in the schools and part of it by the holding of clinics, to which physicians should be invited. The tuberculin test could be made one of the blue ribbon requirements. Signed permission for the test from the parents would have additional educational value. That such tests can be done in the schools on a large scale has been demonstrated by McCain [5] in North Carolina. If the physician's patients are educated along this line, his interest will soon be forthcoming. Some of the physicians in our section of the country are already greatly interested in this work. It has been said that such an undertaking as this will frighten the people. Anything new will always frighten some, but it has been my experience that if it is properly explained many of them will cooperate eagerly and will be anxious to know more. Then, too, it seems to me that it is much better to frighten a few than to wait until it is too late to accomplish anything.

Finally, I am aware of the immensity of such an undertaking as that described here. All of it does not have to be done at once. In cases in which the facilities are limited it seems preferable to do intensive work rather than to attempt to cover wide areas superficially. The scheme offers a much more accurate means of finding tuberculosis in its various stages than is generally used, and especially in children it enables us to discard the unsatisfactory term "tuberculosis suspect." The plan is primarily preventive, and it emphasizes the importance of actual contact with and instruction of the individual, which I think is almost as necessary in the prevention of tuberculosis as it is in treatment.

ABSTRACT OF DISCUSSION

DR. C. ULYSSES MOORE, Portland, Ore.: We have all been looking for a tuberculosis preventive. B C G gives us renewed hope. It hardly seems conceivable that men like Weill-Hallé and Armand-Delille can be mistaken in their conclusions. Yet, on account of the work of Petroff and others, I have hesitated to use B C G. Dr. Casparis has clarified a number of worrisome points. It now appears that when we can get an absolutely nontuberculogenic culture, we can safely give it to newly born infants of tuberculous mothers. It is comforting to know that the Tennessee State Health Department is making a dependable B C G culture. I know of none such on the Pacific coast. Dr. Casparis stated that the Pirquet tuberculin skin test gave only from 50 to 60 per cent positive reactions compared with 100 per cent when the Mantoux intradermal test is used. Will he kindly give us his basis for that statement? In Oregon careful records have been kept since 1915. In that year the number of deaths per hundred thousand of population in the United States registration area was 146 and in Oregon, 95. Both rate curves go irregularly downward to 1927, the latest figures, when the United States registration area rate stood at 80, and Oregon at 59. In making a group study of the number of deaths under the age of 20, one observes two high death peaks that stand out prominently. One is for the group under 1 year of age and the other for the 15 to 19 years group, the former being 80 and the latter 88 for the year 1924. For the same year the death rate in the group from 5 to 9 years was only 13. Why are our high school and college age groups dying so out of proportion to other age groups? Herein lies a challenge to each of us and to every health agency. Dr. Giuseppi Caronia from the University of Rome is now at the University of California repeating and extending his experiments with lysed vaccines. He has done some work on a specially prepared vaccine for tuberculosis. If this association can arrange to have him continue and elaborate this research, it may help solve the burning question of what to do for the teen age group.

DR. F. M. POTTENGER, Monrovia, Calif.: Dr. Casparis' paper brings up many interesting topics for discussion. The primary infection can be found in the lung by careful search in about 85 per cent of cases. In the other 15 per cent the primary focus is not found. The bacilli might pass through the tonsils or the mucous membranes of the upper respiratory or the gastro-intestinal tract and produce first infection. No matter how slight the infection in the lung, the tracheobronchial lymph glands bear the brunt of the infection. They become enormously swollen and go on to caseation and later calcification. In about one third of the cases, according to Aschoff, the primary focus heals. In the other two thirds it takes one of three courses: (1) It spreads immediately to cause a clinical tuberculosis; (2) it remains active for a time, and then quiets down, or (3) it remains quiet for a time and then extends to produce active disease. In children the primary focus itself, in case it does not heal immediately, may produce symptoms of toxemia and bronchitis. The enlarged unhealed tracheobronchial glands which are a part of the primary complex may be the source of toxemia and also a source from which extension occurs. When tuberculosis first affects the body there are symptoms of inflammation which pass off within from twenty-four to forty-eight hours, to be followed by a noninflammatory reaction until the immunity mechanism becomes well stimulated. A second inoculation, however, becomes an inflammatory reaction immediately, because as soon as the bacilli enter the tissues the immunizing protective mechanism comes into play. How to tell when a child is suffering from symptoms of tuberculosis, as a result of an early infection, is somewhat difficult. In suspicious cases I always give the child a tuberculin test. If the child reacts it should be definite information that tuberculous infection is present. A roentgenogram should always be taken, because, if we can find a calcified nodule on the plate, we have further information of the presence of infection. If the child has symptoms, the toxic symptoms as a rule predominate. The child fatigues easily, does not play, does not enjoy food, and may be a restless, nervous and poor sleeper. If the lesion in the lung is of any considerable size (the exact size would differ in different ones), the pneumonic process which would be present would give secretion in the bronchi and might give rise to signs that could be heard on auscultation. Regarding B C G, I would have no hesitancy in using it in a child who was born and obliged to remain in an environment of open tuberculosis. If it could raise the resistance only a few per cent, it would make it more difficult for infection to take place.

DR. ERNST WOLFF, San Francisco: One coming in contact with mothers in the children's chest clinic is deeply impressed by their fear of the child being tuberculous. This fear has the same significance as the cancer complex has. I think it is very important to eradicate this tuberculosis complex of the

5. McCain, P. P.: A Report of the Study of 25,048 School Children for Tuberculosis, South. M. J. 22: 310 (April) 1929.

mother. If the child has a positive tuberculin reaction, I always call the mother's attention to the fact that every adult reacts positively as well, and that the test alone does not mean active disease. I agree with Dr. Pottenger that the marked tuberculin reaction has a meaning of its own, but if I do not suspect active tuberculosis I assure the mother that there is no reason to worry. At the same time I treat the child as being possibly actively tuberculous, and follow the case up closely. We never use tuberculin for treatment, except in specific eye conditions. Malnutrition, nervousness, lack of appetite, fatigue, cough, disturbed sleep, and elevated pulse and temperature are not definite symptoms of childhood tuberculosis, as may be seen from our own statistics in more than 700 patients examined in the children's chest clinic of the University of California Medical School. Concerning the relation of tuberculous allergy to immunity, I doubt whether we are justified in drawing analogies from Swift's work on streptococci in rheumatic fever, as infections of streptococci and tubercle bacilli are in no way comparable as to pathology and immunity phenomena. This is the difficulty we still have today in tuberculin diagnosis. We do not know the definite relation between allergy and immunity.

DR. ROBERT K. CUTTER, Berkeley, Calif.: Will Dr. Casparis discuss more in detail any differences he may have noted in the reaction to B C G in his infants and in the adults?

DR. JOHN L. POMEROY, Los Angeles: Those of us who are engaged in public health administration trust the day will come when the vaccine or serum will be produced in a manner similar to the production of toxin for diphtheria or something of that sort. I was therefore somewhat alarmed when I heard the speaker mention a running sore. If there is anything that is the desperation of the health officer it is a running sore. I do not believe that the speaker brought out very clearly the question of the program in the schools. I cannot help but register a most sincere impression that our medical work in the schools of America is in need of thorough revision. I am glad that Dr. Pottenger mentioned the roentgen ray. We have found some most startling results in Los Angeles County in extensive roentgen work with children in the grammar schools, showing cavities previously missed by medical inspectors or the so-called chest specialists. Some of these patients have been in our universities in California. They have been examined by so-called health experts and yet were never studied with the x-rays. In dealing with tuberculosis, we have not been approaching the problem with a long-term observation program. From now on let us have no more drives. The health officer receives literature saying that on the first day of a certain month of the year a certain procedure will be established for thirty days to cover all the cases of tuberculosis in his community, and such things as that. Has not the time arrived when we can realize that each program of tuberculosis prevention is probably one of say at least ten years? The thing is important in this respect, because thousands of people in America have no family physician and many people are in the hands of various cultists. The health officer and the local public health administrator have the real job of translating the idea of prevention to the family, and whatever machinery is devised by the pathologist, by the bacteriologist and by the clinician must in its very nature be kept simple and it must be thorough. Regardless of vaccines, if the child who is infected is well cared for, it will get well in a high percentage of cases if it has good nutrition and proper hygiene in the home.

DR. HORTON R. CASPARIS, Nashville, Tenn.: In answer to the question about the study of the blood by the supravital technic, I may cite Drs. Sabin, Cunningham and others, who have studied the blood supravitally stained and who believe that the monocyte has a characteristic appearance in tuberculosis and behaves characteristically in the various phases of tuberculosis. In regard to the value of the tuberculin test, we found some years ago in testing seventy-two children with proved generalized tuberculosis that all of them reacted to tuberculin given intracutaneously. It is unwise for one to attribute 100 per cent value to any test, but I think one can rely on the tuberculin test in this work as a means of finding practically all the infected children. Just what significance may be attached to the varying intensity of the tuberculin reaction I do not know. I do not believe that the degree of intensity of the reaction is a measure of the immunity. Many of the most intense reactions that I have seen have been in those infected individuals who belong to the general allergic group, the members of which give a personal or family history of asthma, hay-fever, urticaria, or some other allergic manifestation. It was encouraging to hear such an authority on tuberculosis as Dr. Pottenger emphasize the importance of considering infected children as potentially tuberculous. In every case of a positive tuberculin reaction we believe in explaining its significance to the parents, for without such explanation we do not believe intelligent cooperation is possible. If we hesitate on account of the chance of frightening the parents, we shall not get very far along the line of education and prevention. In regard to the bad psychology of the "running sore" following B C G inoculations, I believe that time and experience will enable us to determine the optimum of B C G to be administered which will eliminate the great majority of the small abscesses following the nodule formation. I am not at present familiar with any difference between infants and adults in the reaction to B C G. To carry out in the schools the plan outlined, I do not believe there will have to be any definite modification of school equipment. If a child has enough tuberculosis to require extraordinary care, then he is too sick to attend the public school. The great majority of the children will be in the asymptomatic stage and usually the only care necessary for them is the correction of defects and the maintainance of good nutrition. This does not usually require open air or sun schools, rest hours or special meals. In fact, I think that any sort of segregation of these children would be not only unnecessary but inadvisable.

GASTRIC ULCER AND CANCER*

SARA M. JORDAN, M.D.
BOSTON

The frequent occurrence of gastric carcinoma, its insidious onset and course, and the generally unsatisfactory results of surgery unless the lesion is in its very early stages, are probably the reasons for a still prevalent assumption that all gastric lesions should be treated surgically because of the fear of malignant development. Within the last few years, however, there has been, if not a universal, at least a considerable reaction against this assumption, and an attempt has been made in the Lahey Clinic to determine, before surgery is contemplated, whether or not a given lesion of the stomach should be considered malignant or potentially malignant.

If gastric syphilis, gastritis and the less commonly found types of gastric tumors, such as polypi and myomas, are omitted from consideration, all lesions of the stomach must be regarded, when first seen, as falling into one of three groups: (1) frankly malignant; (2) frank ulcer, and (3) questionable ulcer or carcinoma. The last group of cases resolves itself later into the groups of malignant or benign ulcer.

A certain number of gastric lesions (about 50 per cent in our series) fall at once into the group of frankly malignant lesions. The classic observations of loss of appetite, strength and weight, with or without some form of indigestion, are supplemented by low or absent free hydrochloric acid and by roentgen evidence of grossly irregular rigidity of the gastric wall. In these cases the diagnosis of gastric carcinoma is made as soon as the possibility of gastric syphilis has been eliminated by adequate tests. It cannot be too fre-

* From the Lahey Clinic.
* Read before the Section on Gastro-Enterology and Proctology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

quently stressed that the mildest and most insignificant symptoms are sometimes the only clinical evidence of an early malignant growth, and that any gastric symptoms of a few weeks' duration require careful radiologic investigation.

In the presence of frankly malignant lesions, the only problem then requiring solution is the question of operability, and this must be solved on the basis of the radiologic observations and the general condition of the patient. Of a series of 66 patients, forty-five were operated on, eighteen with exploration only, thirteen with palliative gastro-enterostomy, three with gastrostomy and eleven with resection. It is often impossible to estimate radiologically whether a given lesion is resectable, and if exploration is done, occasionally even advanced lesions may be removed with advantage to the patient.

A certain number of gastric lesions fall at once into the group of frank ulcer, the diagnosis of which is certain. A typical history, without loss of appetite or strength, with free hydrochloric acid present in normal or hypernormal quantity, and with a niche defect of the lesser curvature of the body of the stomach, is almost positive evidence of a benign lesion. Such a lesion, however, even though it is definitely diagnosable as ulcer, must be followed to the point of certain evidence of complete healing, for while one may be content with incomplete or deferred evidence of healing of the duodenal ulcer without necessarily jeopardizing the patient's life, an unhealed gastric ulcer must be suspected of being potentially malignant.

The course of these cases must be carefully observed, therefore, and the diagnosis of tractable ulcer must be confirmed by the disappearance of the lesion with adequate therapy. It is a compensatory fact that gastric lesions which have not eroded into the pancreas, or have not become markedly calloused, do give satisfactory evidence of complete healing, and that this may be expected within a reasonable time. The disappearance of the niche defect of the lesser curvature is striking and graphic evidence of the healing of the ulcer. Such lesions, I believe, may be considered benign and entirely devoid of potential malignancy. It is therefore consistent with safety to attempt to heal these lesions medically, if satisfactory evidence of healing is obtainable. Clinical relief of symptoms, if complete, and the restoration of the stomach to normal tone and contour, with the complete disappearance of the ulcer niche, are, in my opinion, adequate evidence of healing. Later operations for other abdominal lesions on patients of this series have shown, in such cases, entirely healed ulcers.

While further data on the question of malignant degeneration of the chronic ulcer are being assembled, it is consistent with safety and logic to remove all ulcers which, because of callus or penetration into adjacent organs, are evidently incapable of complete healing, since they represent chronic irritation in an organ notoriously susceptible to malignant growths. If this premise is accepted, it is as desirable to have a method for the detection of the intractable gastric ulcer and its consignment to surgery as to have a method of detection of the tractable gastric ulcer and its consignment to medical treatment.

In the treatment of the obviously benign lesions, therefore, the insurance of their benignity and tractability depends on their radiologic reaction to treatment, which should be a complete disappearance of the lesion and complete restoration of normal contour and tone of the stomach within a few weeks of the beginning of treatment.

A third group is formed by those cases in which, from the history and the physical, chemical and roentgenologic observations, the lesion must be considered questionable. A certain number of acute duodenal ulcers with spasm of the duodenum will at first be held as suggestive of an organic lesion of the antrum, but relief of the acute symptoms will at once release the spasm of the antrum, and these lesions can then be properly classified as duodenal ulcers. The true gastric lesions of this suspicious group were formerly referred at once to the surgeon for exploration; but it is in just such cases that the surgeon, as has been stressed by Dr. Lahey, even with actual palpation and visualization of the lesion, is unable to decide whether or not the lesion is benign or malignant and, because of his fear of leaving a malignant lesion, is forced to remove, with considerable risk to the patient, a lesion which may by pathologic examination be proved benign. For this uncertain criterion of visualization and palpation by surgical exploration, a presurgical criterion has been substituted, which has been found by us to be much more satisfactory from the point of view of the patient's

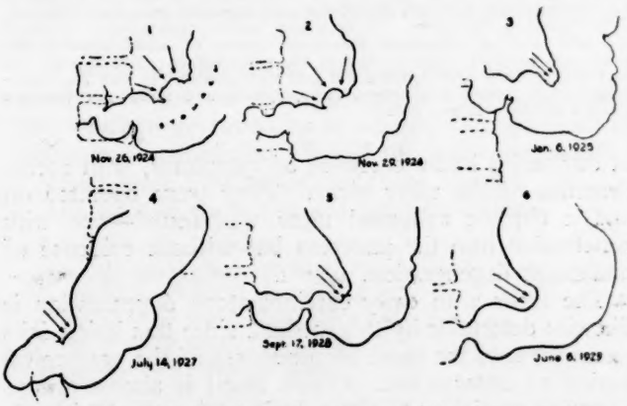


Fig. 1.—Diagrams of stomach drawn to scale from roentgen films to show roentgen defects in M. G., a woman, aged 52, with a history of thirty-five years of indigestion (typical ulcer distress with remissions) with recent massive hemorrhage. Examination showed low free hydrochloric acid, occult blood in the stools, and a large lesion of the lesser curvature. With hospital management there was improvement in the defect of the stomach, gradual disappearance of occult blood, and marked clinical improvement. The patient is perfectly well four years and seven months after treatment.

safety. This consists of submitting the patient with a lesion that is not definitely diagnosable as either ulcer or carcinoma to a period of hospital management on the strictest ulcer regimen. The clinical condition and occurrence of symptoms are carefully observed, and it is required that all symptoms be completely relieved during this period. The radiologic defect is examined every five or six days and it is required that this diminish in extent, and that the impaired tonus of the gastric walls be improved during this period. All stools are examined chemically, and it is required that occult blood disappear completely during this period of control of the diet and of extragastric oozing.

If the lesion is a tractable ulcer, these three requirements of the test period will be fulfilled; and within from ten to thirty days after the beginning of treatment, the radiologic defect will have disappeared and the gastric wall in this area will be entirely flexible. In such cases in our series, some of which have been observed over a period of five years, there has been no roentgenologically apparent recurrence of ulcer symptoms or of ulcer defect.

The chronic ulcer which improves to a certain point but fails to heal completely shows, after two or three weeks, a definite diminution in the size of the defect, sometimes to the point of almost complete disappearance. With careful fluoroscopic examination, however, there is still seen a small area of stomach wall which is not entirely flexible, and examination of films shows a minute persistent defect in this area. Two such patients

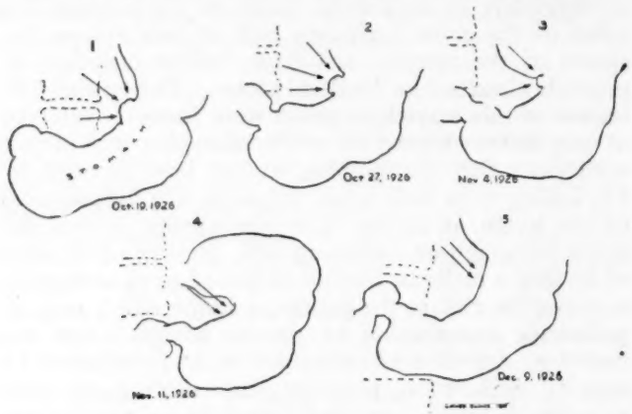


Fig. 2.—Diagrams of stomach in E. M., a man, aged 42, with a history of nine months of typical distress and recent loss of strength and appetite. Free hydrochloric acid was absent when he was first seen, but there was occult blood in the stools. Three weeks' hospital management produced complete relief of symptoms, persistent absence of occult blood in the stools and complete disappearance of the niche defect. Two months and four months later free hydrochloric acid was present (48 and 18, respectively); the patient was free from symptoms and there was complete absence of the roentgen defect.

in our series had recurrence of symptoms, with recrudescence of the ulcer niche. They were operated on and a chronic calloused ulcer was found—one with penetration into the pancreas but without evidence of malignant degeneration.

The ulcer with early carcinomatous degeneration is likewise detectable by this method, since this lesion fails to conform to the three requirements of the presurgical period of observation. Occult blood is almost always found to persist or to recur during this period of treatment, if every stool is examined. The radiologic defect may show, at first, a slight improvement, but within the first ten days the progress of improvement ceases and restoration to normal contour does not occur. This slight improvement in certain cases is probably due to the subsidence of acute inflammatory reaction when it is present. Most cases that are malignant, however, show no change at all in the roentgen deformity. The clinical symptoms may or may not be relieved. In certain cases complete relief occurs at first, but symptoms later recur. The important point to be borne in mind is that it is necessary that all three requirements be fulfilled and that a failure of any one of these indicates that the lesion should be regarded as suggestive of a malignant condition and that resection of the stomach should be unreservedly advised. Under these circumstances, even if the lesion appears soft and innocent when seen at laparotomy, it should be resected because the results of the presurgical test period indicate that it is malignant.

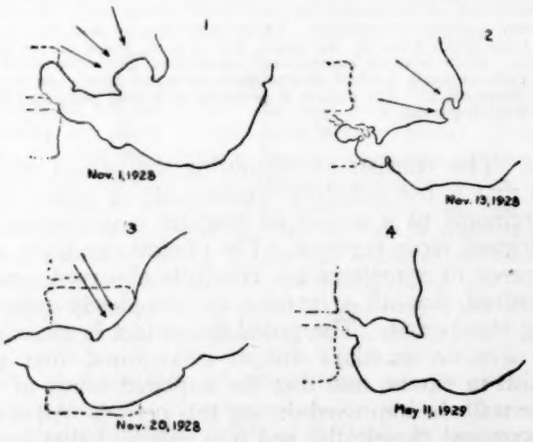


Fig. 3.—Diagrams of stomach in M. B., a man, aged 62, with a history of one month's severe distress. Free hydrochloric acid was 65 and occult blood was present in the stools. The diagrams, based on roentgen films, show: 1, size of defect before treatment was begun; 2, diminution in defect after thirteen days; 3, disappearance of defect after twenty days, and 4, persistent absence of defect after six months.

In a series of 133 patients with gastric lesions admitted to the Lahey Clinic, sixty-six showed frankly malignant growths immediately diagnosable as such. Study of these sixty-six cases of frank malignancy brought out the following facts:

There were thirty-eight males and twenty-eight females.

The ages in fifty-nine of these cases were as follows:

Below 30 years, no cases.
From 30 to 39 years, six cases.
From 40 to 49 years, ten cases.
From 50 to 59 years, twenty cases.
From 60 to 69 years, twenty-one cases.
From 70 to 79 years, two cases.

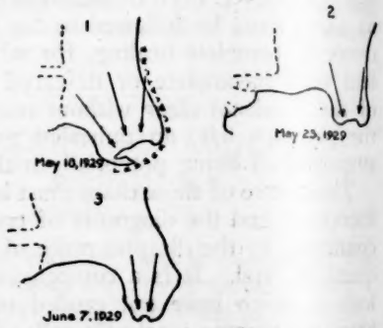


Fig. 4.—Tracings from roentgen film showing diminution in size of niche, concomitant with relief of symptoms in ulcer. 1, before treatment was begun; 2, thirteen days after beginning of treatment, and 3, twenty-eight days after beginning of treatment.

The duration of the history in fifty-eight of these cases was as follows:

Less than 2 months, ten cases.
Between 2 and 6 months, twelve cases.
Between 6 months and 1 year, fifteen cases.
Between 1 and 2 years, eleven cases. (Most of this group estimated the duration of symptoms as about one year.)
Between 2 and 3 years, two cases. (One with a change in the history during past two months showed increased intensity of symptoms.)
Between 3 and 4 years, two cases. (One had gastroenterostomy three years before admission with suture of the perforated gastric lesion.)
Five years or more, six cases. (There were four with superimposed intensive symptoms for one year, ten months, four months and two weeks, respectively. In one, duodenal ulcer and gastric carcinoma were found at operation.)

The location of the lesion in fifty-five of these cases, as determined by roentgen examination and operation, was as follows:

Distal third of stomach, twenty-three cases.
Distal two thirds of stomach, five cases.
Middle third of stomach, eleven cases.
Proximal third of stomach, seven cases.
Proximal two thirds of stomach, two cases.
Complete involvement of stomach, seven cases.

The outstanding symptoms in sixty-four of these cases, as given in the histories, were as follows:

Epigastric distress, thirty-four cases.
Loss of weight (from 5 to 60 pounds, or 2.3 to 27 Kg.), thirty-four cases.
Vomiting, twenty-three cases.

Hemorrhage, five cases.
Constipation, seventeen cases.
Loss of appetite, fourteen cases.
Pain in left upper quadrant, ten cases.
Loss of strength, ten cases.
Gaseous distention and eructations, seven cases.
Diarrhea, five cases.
Recent pallor, four cases.

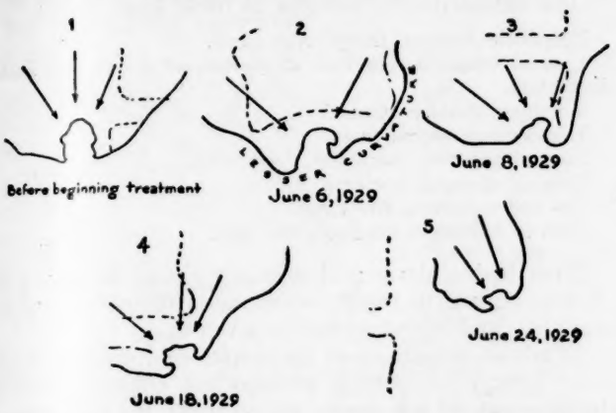


Fig. 5.—Tracings from roentgen film showing diminution in size of defect, concomitant with relief of symptoms in ulcer, 1, before beginning of treatment; 2, two days after beginning of treatment; 3, four days later; 4, nine days later, and 5, twenty days later.

Free hydrochloric acid in thirty-three of these cases studied was absent in twenty-nine cases and present in four cases.

Of the four cases in which it was present, two were carcinoma of the fundus, one was carcinoma of the pyloric end of the stomach, associated with duodenal ulcer, and one was a complete involvement of the stomach with a very low free hydrochloric acid.

Of the remaining sixty-seven gastric lesions, forty-four were proved, by the fact that they showed evidence of complete healing, to be tractable ulcers, while seven were considered ulcer but operation was performed because they were intractable. The pathologic examination in these cases did not show malignancy. In one case gastro-gastrostomy was done because of a stenosing hour-glass contraction of a healed gastric ulcer. Two others were considered intractable ulcers but operation was not done, in one because of the patient's age and general condition, and in the other because operation was refused. Thirteen patients were operated on because, after a presurgical period of treatment, they were considered to have malignant lesions. Twelve of these had resection (one had gastro-enterostomy because of her condition).[1] Pathologic examination in the twelve resected cases showed malignant growths. In two other cases, inadequately controlled, operation was done elsewhere and a malignant condition was found.

A study of these thirteen cases in which operation was performed because a malignant condition was suspected after a presurgical test period of treatment brought out the following facts:

There were eight males and five females.

The ages of these patients were as follows:

Below 30 years, no cases.
From 30 to 39 years, two cases.
From 40 to 49 years, two cases.
From 50 to 59 years, five cases.
From 60 to 69 years, four cases.
From 70 to 79 years, no cases.

1. This patient died after operation of embolism, and the autopsy observations were not obtained.

The duration of the history was as follows:

Less than 6 months, no cases.
Between 6 months and 1 year, three cases.
Between 1 and 2 years, one case.
Between 2 and 3 years, three cases.
Between 3 and 4 years, three cases.
Between 4 and 5 years, two cases.
Twenty years, one case (with superimposed intensity of distress for two months).

The location of the lesion in these cases was as follows:

Distal third of stomach, ten cases.
Middle third of stomach, two cases.
Proximal third of stomach, one case.

The symptomatology (outstanding symptoms as given in the histories) was as follows:

Epigastric distress, eleven cases.
Vomiting, six cases.
Loss of weight (from 10 to 15 pounds, or 4.5 to 7 Kg.), four cases.
Loss of appetite, one case.
Loss of strength, two cases.
Diarrhea, one case.

Free hydrochloric acid was present in normal amount in nine cases; in small amount in two cases, and absent in two cases.

A study of the seven cases of intractable ulcer in which operation was done because they were intractable, and which were found to be benign, chronic ulcers by pathologic examination, showed the following facts:

There were four males and three females.

The ages of these patients were as follows:

Below 30 years, no cases.
From 30 to 39 years, no cases.
From 40 to 49 years, two cases.
From 50 to 59 years, three cases.
From 60 to 69 years, two cases.
From 70 to 79 years, no cases.

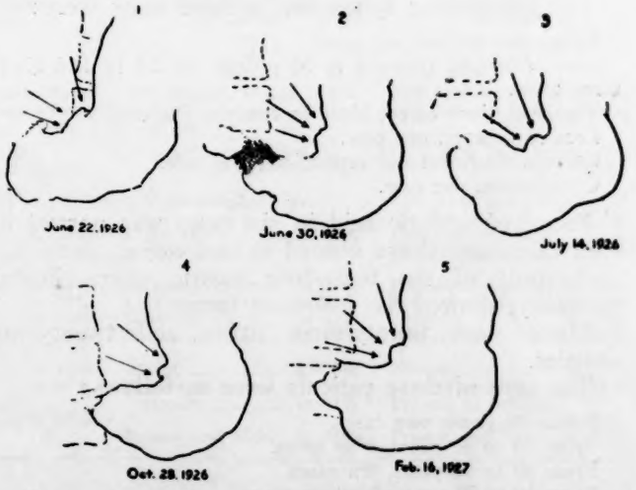


Fig. 6.—Roentgen defects of stomach in J. G., a woman, aged 57, with a history of symptoms of six months' duration. Free hydrochloric acid was absent when she was first admitted; later it was 34. There was no occult blood in the stools. Complete relief of symptoms resulted from hospital management. The diagrams show: 1, size of lesion before treatment was begun; 2, diminution in size in eight days; 3, diminution but persistence in seven and one-half weeks; 4, persistence of defect after four months, and 5, increased size and recurrence of symptoms after eight months. Resection was performed.

The duration of the history was as follows:

Less than 6 months, one case.
Between 6 months and 1 year, no cases.
Between 1 year and 2 years, no cases.

Between 2 years and 3 years, no cases.
Between 3 years and 4 years, two cases.
Over 5 years, four cases.

The location of the lesion in these cases was as follows:

Distal third of stomach, three cases.
Middle third of stomach, three cases.
Proximal third of stomach, one case.

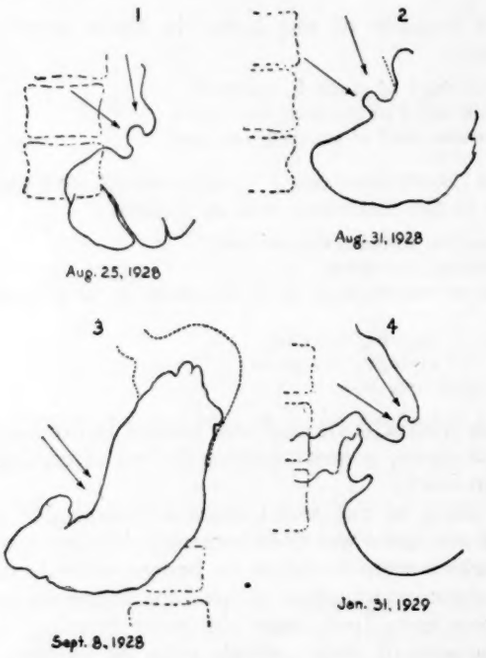


Fig. 7.—Roentgen defects of stomach in A. S., a man, aged 53, with a history of symptoms of three years' duration. Free hydrochloric acid was 60; there was no occult blood in the stools. Complete relief of symptoms resulted from hospital management. The diagrams show: 1, size of lesion before treatment was begun; 2, diminution in size in six days; 3, complete disappearance of defect in fourteen days but with stomach in different position, a minute area of rigidity being seen, and 4, recrudescence of defect in five months. Resection was done.

The outstanding symptoms in these cases were:

Epigastric distress, six cases.
Loss of weight (from 5 to 30 pounds, or 2.3 to 13.6 Kg.), three cases.
Vomiting, three cases; blood in vomitus, one case.
Loss of appetite, one case.
Gaseous distention and eructations, one case.
Constipation, one case.

Free hydrochloric acid in six cases was normal in four cases and above normal in two cases.

A study of the forty-four gastric ulcers, healed medically, showed the following facts:

There were twenty-three males and twenty-one females.

The ages of these patients were as follows:

Below 30 years, two cases.
From 30 to 39 years, nine cases.
From 40 to 49 years, ten cases.
From 50 to 59 years, fourteen cases.
From 60 to 69 years, seven cases.
From 70 to 79 years, one case.
From 80 to 89 years, one case.

The duration of the history was as follows:

Less than 6 months, two cases.
Between 6 months and 1 year, four cases.
Between 1 and 2 years, five cases.
Between 2 and 3 years, five cases.
Between 3 and 4 years, three cases.
Between 4 and 5 years, two cases.
From 5 to 30 years, twenty-three cases.

The location of the lesion in this group of cases was as follows:

Distal third of stomach, fourteen cases (in one case gastroenterostomy had been done).
Middle third of stomach, twenty-nine cases (in one pylorectomy had been done).
Proximal third of stomach, one case.

The outstanding symptoms in these cases were:

Epigastric distress, thirty-seven cases.
Loss of weight (from 5 to 25 pounds, or 2.3 to 11.3 Kg.), four cases.
Vomiting, thirteen cases.
Hemorrhage, eleven cases.
Loss of appetite, four cases.
Loss of strength, one case.
Gas and distention, five cases.
Pain in left upper quadrant, one case.

Free hydrochloric acid was not absent in any case. It was normal in twenty-seven cases; above normal in ten cases and below normal in seven cases.

While a comparison of the results of a study of these four groups of cases is perhaps not entirely justified because two of the groups are so small, the accompanying table is suggestive of certain differences in the nonmalignant and the malignant groups.

Figures 1, 2 and 3 illustrate the clinical histories and roentgen defects (diagrams of stomachs drawn to scale from roentgen films) in three cases of lesser curvature lesions of the body of the stomach, which were proved tractable ulcers.

Figures 4 and 5 demonstrate the changes in the size and the rapidity of healing in three cases of ulcer of the lesser curvature (outlines of lesions traced from films).

Figures 6, 7 and 8 illustrate the clinical course and radiologic defects in three cases of chronic intractable ulcer.

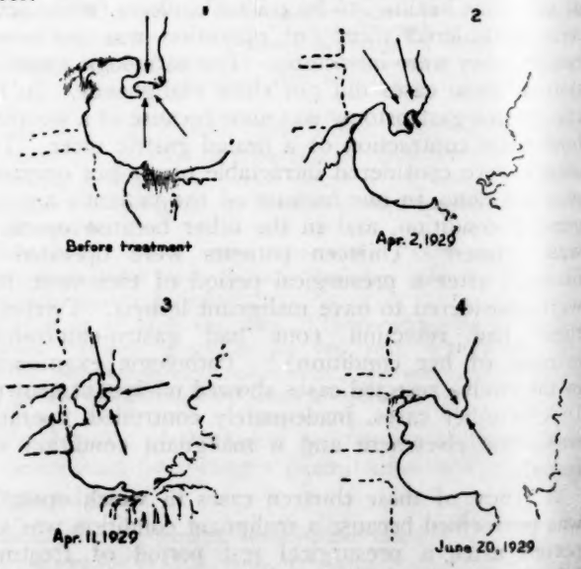


Fig. 8.—Diagrams of stomach in C. E. C., a man, aged 49, admitted in 1929 with a history of ulcer since 1914; excision of the ulcer of the posterior wall of the stomach in 1917; posterior gastro-enterostomy for duodenal ulcer in 1924, and severe symptoms for the past two years. There was complete relief of symptoms with hospital management. The diagrams show: 1, size of lesion before treatment was begun; 2, diminution in size in nine days; 3, further diminution in eighteen days; 4, almost complete disappearance but persistence of minute area of rigidity. The patient was advised to have resection but refused as long as he was free from symptoms.

Figures 9 and 10 show the clinical course and radiologic defects in two cases of questionable lesions, proved malignant by preoperative management. In

both these cases, visualization and palpation at laparotomy could not have decided the question of malignancy.

SUMMARY

Gastric ulcers need not all be regarded as malignant or potentially malignant.

Frank ulcers which show a complete disappearance by roentgen examination and complete clinical relief may be regarded as healed.

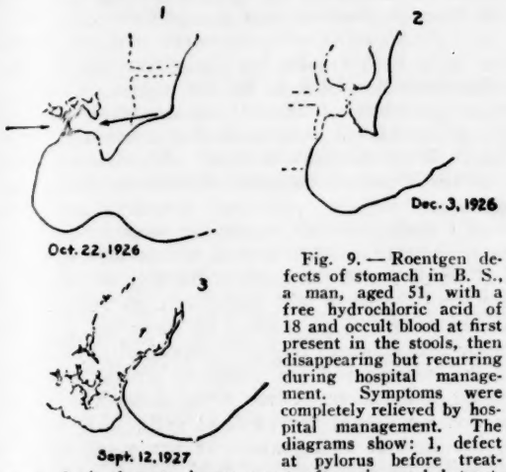


Fig. 9. — Roentgen defects of stomach in B. S., a man, aged 51, with a free hydrochloric acid of 18 and occult blood at first present in the stools, then disappearing but recurring during hospital management. Symptoms were completely relieved by hospital management. The diagrams show: 1, defect at pylorus before treatment; 2, inadequate improvement after six weeks' treatment; 3, appearance of stomach twenty-one months after resection. At laparotomy a small lesion proximal to the pylorus was found. Resection was done because of failure of patient to fulfil requirements of presurgical test period. The pathologic report was early adenocarcinoma. The patient was well two years and three months later.

A certain percentage of frank ulcers are of the callus and penetrating type, and although these may partially heal and clinical symptoms be completely relieved, they are still discernible in a careful roentgen examination as minute defects, and should be resected because they are a source of chronic irritation in an organ susceptible to malignant degeneration, and because, in my opinion, there will later be recurrence of symptoms and recrudescence of the ulcer crater.

A certain group of gastric lesions can be diagnosed as suggestive of malignancy, and because of this suspicion, even if palpation and visualization with laparotomy leave the surgeon in doubt as to their malignancy, they should be submitted unhesitatingly to radical surgery after a two or three weeks period of presurgical treatment during which there has been a failure of fulfilment in one or more of the following requirements:

1. Occult blood must disappear completely from the stools.
2. Symptoms must be completely relieved.
3. The roentgen defect must disappear completely, and the contour and tone of the stomach be restored to normal.

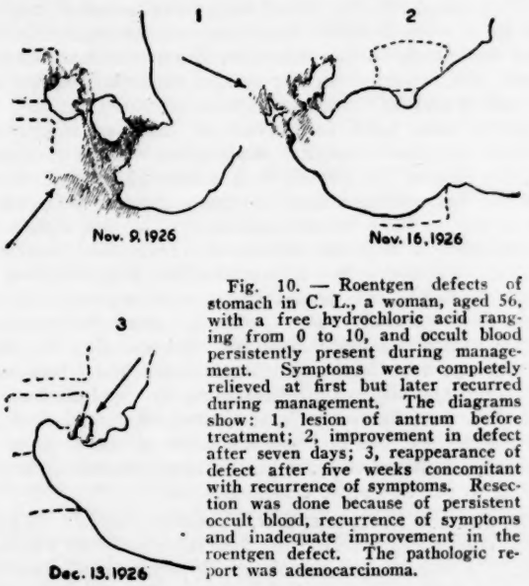


Fig. 10. — Roentgen defects of stomach in C. L., a woman, aged 56, with a free hydrochloric acid ranging from 0 to 10, and occult blood persistently present during management. Symptoms were completely relieved at first but later recurred during management. The diagrams show: 1, lesion of antrum before treatment; 2, improvement in defect after seven days; 3, reappearance of defect after five weeks concomitant with recurrence of symptoms. Resection was done because of persistent occult blood, recurrence of symptoms and inadequate improvement in the roentgen defect. The pathologic report was adenocarcinoma.

Surgery for gastric lesions, except palliative gastroenterostomy for inoperable malignant growths, should always be radical resection, since all lesions that are not potentially malignant are medically healable.

Comparison of Studies of Four Groups of Cases

	Frank Malignancy (66 cases)	Proved Malignancy (13 cases)	Intractable Ulcer (7 cases)	Healable Ulcer (44 cases)
Male	57%	61%	57%	52%
Female	43%	39%	43%	48%
Greatest age incidence	45% between 40 and 59 yrs. 62% between 50 and 69 yrs.	55% between 40 and 59 yrs. 66% between 50 and 69 yrs.	71% between 40 and 50 yrs. 71% also between 50 and 69 yrs.	54% between 40 and 59 yrs. 47% between 50 and 69 yrs.
Duration of history	9% (over 5 yrs.) (3% only without superimposed history) 56% under 1 yr.	7% over 5 yrs. (with superimposed history) 23% under 1 yr.	57% over 5 yrs. 14% under 1 yr.	52% over 5 yrs. 14% under 1 yr.
Location of greatest incidence	Distal third.....34% Middle third.....16%	Distal third.....77% Middle third.....15%	Distal third.....43% Middle third.....43%	Distal third.....32% Middle third.....65%
Outstanding symptoms	Epigastric distress in 51% Loss of weight.....in 51% Vomiting .....in 34% Hemorrhage .....in 7%	Epigastric distress..in 84% Loss of weight.....in 30% Vomiting .. ..in 46% Hemorrhage .....in 8%	Epigastric distress..in 85% Loss of weight.....in 43% Vomiting .....in 43% Hemorrhage .....in 14%	Epigastric distress..in 84% Loss of weight.....in 9% Vomiting .....in 29% Hemorrhage .....in 25%
Free hydrochloric acid	Absent .....in 88% Present and low....in 12%	Absent .....in 15% Present and low....in 15% Present in normal amount .....in 70%	Absent .....in 0% Present in normal amount .....in 67% Present and high...in 33%	Absent .....in 0% Present and low....in 16% Present in normal amount .....in 63% Present and high...in 23%

A certain number of lesions, at first considered suggestive of malignancy, will be proved benign, tractable ulcers and may be safely treated medically because they fulfil the requirements outlined.

605 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. FRANK H. LAHEY, Boston: As a result of my association with a gastro-enterologic department, I have learned a great deal about the question of ulcer alone and ulcer and its relation to malignancy. I have come to realize that a number

of gastric and duodenal lesions are not primarily surgical. All ulcers are primarily, at least during their period of consideration, nonsurgical. I disagree definitely with any surgeon who assumes that the treatment of ulcer is preeminently and primarily surgical. The situation regarding the surgery of gastric and duodenal ulcer is still considerably confused, and it is our duty to improve the accuracy of medical management. That has been one of the things I have learned as a surgeon in association with a gastro-enterologist. So this scheme of preoperative medical treatment has been gratifying to me in segregating these cases, which worried me greatly. There is no difficulty from the point of view of the surgeon in arriving at a conclusion as to what should be done in the frank carcinoma. When there are pearly white flakes on the peritoneum, hard, firm glands, and retracted nodular masses, then the problem is, Can one resect and will the patient stand it?

On the other hand, in the case of indurated ulcers, there is no such thing as a surgical exploration. In view of the fact that the patient has already been submitted by a physician and one has demonstrated that he has a chronic indurated ulcer, one cannot, with a clear conscience, close the wound with a possibility that later he will show carcinoma. Therefore one resects. Resection has a considerable mortality. It is an operation that I should undertake only with convincing evidence of its necessity. Dr. Jordan has demonstrated that these gastric ulcers are really healable. I know they are healable. I have seen them before they were healed and I have operated for gallbladder disease afterward and have palpated and found that they were healed with good soft scars. If I could rule out malignancy, and if I could choose an ulcer to be treated medically, I should like the gastric ulcer, because it is so comforting to see this niche disappear.

DR. GEORGE B. EUSTERMAN, Rochester, Minn.: The encouraging cooperation of internist and surgeon is well emphasized here. In our clinic only about 50 per cent of the duodenal ulcers and 75 per cent of the gastric ulcers are submitted to operation. These figures show that there is room for adequate medical treatment in a certain percentage of duodenal and gastric ulcers, greater when the surgical facilities are not the best or operation is refused, less indicative when chronicity, complications, associated lesions, and economic or social handicaps are present, or when facilities for adequate therapy, cooperation and check-up, especially in the gastric lesions, are lacking. The possibility of medical cure substantiated by the frequency of healing and healed chronic lesions in the autopsy room, and the surgical example of indirect rapid healing of even larger highly situated ulcerating lesions after jejunostomy alone and jejunal feeding, justify treatment. Gastric ulcer is relatively infrequent. Only one out of nine or ten of all peptic ulcers are gastric in location. The large majority of all gastric lesions are carcinomatous. In a recent unbiased study of a large material, Alvarez has confirmed our much challenged previous pronouncements that many gastric carcinomas masquerade clinically and roentgenologically as benign ulcers and are actually malignant when removed. This puts a definite responsibility on us when we accept patients with gastric lesions for nonsurgical therapy. Overestimated, of course, in some quarters is this responsibility, and in some quarters it is underestimated. The cure of cancer of internal organs depends on early eradication by surgical measures. It is my experience that many benign gastric ulcers heal more readily and thoroughly under skilful treatment than do duodenal ulcers. The author has shown that a considerable number of patients with ulcers of long duration get well. I am sorry she did not present those figures. They were not a large group but I was amazed in going over the manuscript to see the number who had had symptoms over a long period of time. On the basis of the response to treatment from the symptomatic, roentgenologic and occult bleeding standpoint, Dr. Jordan has emphasized an important clinical criterion as to the benign nature of the lesion or its curability by nonsurgical methods. As one cannot safely differentiate an intractable lesion from a malignant one by the degree of response to treatment alone, no time should be lost in urging competent surgical intervention.

DR. FRANK SMITHIES, Chicago: This diagnostic procedure prior to advising surgery is fully warranted, but I should not care, in individuals who had a recrudescence of their complaints and were at the age mentioned by Dr. Jordan, to have them go through this diagnostic pretherapy too often, because, as Dr. Jordan has said and has demonstrated in a number of instances, the individuals became symptom free and yet the lesion progressed. It is in that very group of cases that one is uncertain as to what is happening in the edges of the scar or in the base. There may be cessation of symptoms, there may be no hemorrhage and even the x-rays may show variations in size, but in a number of cases carcinoma is developing. I should add a fourth preoperative diagnostic criterion, namely, investigation of the family history of each patient. If a patient with this type of ulcer has had a grandfather, a great grandfather or a grandmother with carcinoma, and more particularly a father or a mother who has died from carcinoma, then I should be extremely loath to let the x-rays or other criteria determine the course I should suggest regarding treatment. People seem to think it remarkable that a lesion in the stomach may heal. Why shouldn't it heal? We observe healing in other lesions of mucous surfaces. Chronicity should be differentiated in two respects: pathologic chronicity and in the time factor with regard to days, weeks or months. Great changes may occur in the stomach mucosa within an extremely short time. If we do not do too much in the way of treatment, many of these stomach ulcers will heal, but I do believe that much interference occurs in an attempt to carry out a certain type of therapy which brings about an abnormal physiologic condition in the stomach and the treatment actually interferes with the healing of the ulcer. Ulcer of the stomach is a self-limited disease and we should regard it as such. Are we sure that during the medical management we are going to be able to prevent other complications, as fatal hemorrhage, perforation, perigastritis with adhesions, and deformity? Dr. Jordan's statistics are interesting but they are not convincing. In an organic lesion of the stomach in an individual above the age of 45, I feel that my responsibility to the patient is such that I want that patient to be examined surgically. I would rather have a fact than an opinion.

DR. SARA M. JORDAN, Boston: The responsibility for the evidence of healing is great, as Dr. Eusterman has stressed. I think in spite of that we still can remain optimistic about the prospects. If my optimism diminishes I shall certainly report it. The number of cases which were healed over a period of five years was forty-four out of sixty-seven which were not frankly malignant. Of these forty-four, I think about a third to a half have had a three-year history of freedom from symptoms. They were all followed up and checked at least once a year. That is a most important point in the treatment of these lesions. Dr. Smithies spoke about recrudescence and recurrence of symptoms and a second presurgical criterion. We, of course, do not approve of that. If there is not complete healing, if there is not a complete disappearance, then we advise surgery at once. Unless the stomach wall returns to a perfectly normal appearance as shown by fluoroscope and by film examination, and unless the patient is absolutely well, we advise resection. Regarding the family history, I have not the exact data on the family history in these cases, but it has been a striking fact that in the frankly malignant cases there is frequently a family history. It is also true, however, that we have had patients with benign lesions, that is, healed ulcers, who are now well after a varying period of time, who have had gastric carcinoma in the family. However, we do regard it as an additional bit of evidence which makes us question the lesion very definitely. Hemorrhage and perigastritis are discernible during the period of treatment.

Public Health.—One of the most important lessons that we should appreciate is the great complexity and the vast scope of the field of public health. It is not a definite science but comprises a great body of knowledge about as broad as experimental science itself. For that reason the study of public health should be excellently adapted for general educational purposes. In this field, not only are the fundamentals of practically every laboratory science applied, but here is ample opportunity for the study of classics, the humanities, social problems and economics; for all civilizations have been profoundly influenced by problems of health and disease.—Davis, D. J.: The Laboratory in Relation to Preventive Medicine, *Illinois M. J.*, November, 1929.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

SOLUTION OF INVERT SUGAR-LILLY.—A solution of a mixture of dextrose and levulose obtained by the inversion of sucrose.

Actions and Uses.—Solution of invert sugar-Lilly is used in the injection treatment of varicose veins. It is claimed that the use of sugar solutions such as solutions of dextrose or of invert sugar have the advantage over solutions of sodium chloride, sodium salicylate or mercuric chloride in that they do not cause severe cramps or sloughing if accidentally injected outside the vein.

Dosage.—Depending on the size of the vein, from 5 to 20 cc. of solution is injected. For young patients whose veins react to solutions of less concentration, solutions containing from 50 to 60 Gm. of invert sugar in 100 cc. are used; for older patients and varicosities of long standing, a solution containing 75 Gm. of invert sugar in 100 cc. is used.

Manufactured by Eli Lilly & Co., Indianapolis. No U. S. patent or trademark.

Solution of Invert Sugar-Lilly, 5 Gm. in 10 cc.
Solution of Invert Sugar-Lilly, 6 Gm. in 10 cc.
Solution of Invert Sugar-Lilly, 7.5 Gm. in 10 cc.

Solution of invert sugar-Lilly is prepared by inverting cane sugar with tartaric acid and adjusting to a p_H of 6.8 with sodium hydroxide.

Solution of Invert sugar-Lilly is a clear, pale amber, sweet, watery solution.

A 10 cc. portion requires less than 2 cc. of tenth-normal sodium hydroxide to neutralize the acid, phenolphthalein being used as an indicator. No sediment separates from the solution in ampules on prolonged standing (*insoluble salts, ultramarine or prussian blue*). A 10 per cent solution is not affected by the addition of an equal volume of hydrogen sulphide solution (*heavy metals*). Ten cc. portions of a 10 per cent solution remain clear for at least one minute after the addition of 1 cc. of silver nitrate solution (*chloride*) or of ammonium oxalate solution (*calcium*). A portion equivalent to 5 Gm. of invert sugar shows no more sulphate than corresponds to 0.3 cc. of fiftieth-normal sulphuric acid according to the U. S. P. X test. A solution equivalent to 5 Gm. of invert sugar evaporated to dryness and ashed yields a residue weighing not more than 0.004 Gm. A solution equivalent to 5 Gm. of invert sugar yields not more ammonia than is equivalent to 0.5 cc. of hundredth-normal hydrochloric acid. A solution containing 16 per cent of invert sugar calculated from its copper reducing power when examined by means of the polariscope has a specific rotation of $a\frac{25}{D}$ between — 16 and — 18.5.

Dilute exactly 10 cc. of the original to exactly 500 cc.; transfer 10 cc. of this solution to a 250 cc. beaker and assay for invert sugar according to paragraphs 35 and 36 on pages 190 and 191 of the 1925 edition of the A. O. A. C. Manual: the amount of invert sugar is within 5 per cent of the amount claimed. Transfer 50 cc. of the prepared solution to a 100 cc. standard flask; invert according to paragraph 23-C, page 187 of the A. O. A. C. Manual and assay for sucrose according to paragraph 28, page 189 of the A. O. A. C. Manual: the weight of sucrose is not greater than 4 per cent of the weight of invert sugar found.

SULPHARSPHENAMINE-DE PREE (See New and Nonofficial Remedies, 1929, p. 71).

The following dosage forms have been accepted:

Sulpharsphenamine-De Pree, 0.5 Gm. Ampules.
Sulpharsphenamine-De Pree, 0.9 Gm. Ampules.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

UNGUENTUM CARBONIS COMP. (HILF) NOT ACCEPTABLE FOR N. N. R.

Unguentum Carbonis Comp. (Hilf), marketed by the Hilf Products Company, Brooklyn, N. Y., is claimed to contain an alcoholic extract of crude coal tar, representing from 2 to 2.5 per cent of "its active constituents"; menthol and thymol, each 2½ grains to the ounce; eucalyptol, 5 minims to the ounce; salicylic acid, 2 per cent; in a base consisting of kaolin and "boroglyceride" (equivalent to 10 per cent of boric acid). The proprietors claim that this mixture possesses "the well known medicinal virtues of Coal Tar, the stimulating and analgesic effect of Menthol, Thymol and Eucalyptol, the healing virtues of Boric Acid in the form of a Glycerite, the absorbing and Osmotic effect of Kaolin." They state: "In introducing this preparation to the Medical and Pharmaceutical Profession we have been actuated by the imperative necessity to devise an ethical remedy which should exhibit the therapeutic virtues of Crude Coal Tar without its highly objectionable features"; they further assert: "Our preparation offers to the physician the full remedial value of Crude Coal Tar greatly improved and assisted in its action by the other ingredients. . . ."

According to a statement on the trade package, Unguentum Carbonis Comp. (Hilf) is "indicated in the treatment of acute and chronic eczema and pruritis." The trade package bears the instruction, "Apply freely 3 to 4 days or as directed by treating Physician." The following extravagant and unsupported claim is made in the advertising: "Clinical datas have proven its exceptional merits as an ideal treatment in all Eczematose conditions of the skin as well as in the various obstinate forms of Pruritis."

Crude coal tar enjoys a reputation in the treatment of skin diseases largely based on the work of White, comprising his experiences in the Massachusetts General Hospital (*Arch. Dermat. & Syph.* **4**:796 [Dec.] 1921; **15**:387 [April] 1927). This is shown by the discussion of his publications. Dr. White states that 100 per cent crude coal tar was used at first with some brilliant successes and some failures, but that many patients complained of its irritant action and that it was then used in the form of an ointment having the following composition: crude coal tar, 2; zinc oxide, 2; cornstarch, 16; petrolatum, 16. To prepare the mixture, the cornstarch and petrolatum are mixed; then the coal tar and the zinc oxide are mixed; then the two are combined. Dr. White states that odorless and colorless mixtures are unsatisfactory; that the mixture must be black and must smell of coal tar; and that preparations of an olive green color were found unsatisfactory, often irritating, often pyogenic.

The referee of the Council in charge of Unguentum Carbonis Comp. (Hilf) sought the opinion of several prominent dermatologists about crude coal tar. Dr. Charles J. White informed the referee that the vegetable tars are stimulating and that the mineral tars are soothing, antipruritic and perceptibly drying, and that crude coal tar is more effective in silencing seborrheic troubles than are any of the vegetable tars. One dermatologist stated that coal tar is perhaps twice as effective as pine tar as a stimulant and antipruritic, but that it is objectionable because of its black color and because it is irritant. He stated that he had used a decolorized and less irritant ointment containing zinc oxide. Another stated that he considered coal tar invaluable in certain conditions. He preferred to use it according to the original suggestion of Dr. White of Boston, stating that he would feel lost without coal tar in dermatologic practice.

The referee reported that from his study he was convinced that crude coal tar has distinct therapeutic properties. He pointed out that Unguentum Carbonis Comp. (Hilf) is a different preparation from those used by White and his followers, who hold that the decolorized and deodorized coal tar preparations are distinctly inferior. The referee found no acceptable evidence for the need of the Hilf preparation, and in view of its complexity, he believes the use of Unguentum Carbonis Comp. (Hilf) is detrimental to rational therapeutics.

When the Hilf Products Company was informed of the Council's findings, it requested postponement of definite action to permit the presentation of further evidence. After postponing action on the preparation for several months the Council received one report concerning the clinical use of the product. A physician reported to the Council that he had used the ointment on eight patients; that one with generalized eczema did very well; that two with toxic erythema of the leg healed quickly; that three cases of neurodermite did not do quite so well; that one with seborrheal dermatitis (postaural) did not do at all well; and that one with psoriasis was not benefited; that three patients preferred it because it is nonstaining and easy of removal. He says, further: "Personally, I prefer other combinations because naturally I can vary them to suit each case." This report does not permit modification of the Council's findings.

The Council declared Unguentum Carbonis Comp. (Hilf) unacceptable for New and Nonofficial Remedies because it is a needlessly complex and therefore unscientific mixture which is marketed with unwarranted therapeutic claims and under a name which is insufficiently descriptive of its composition.

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SATURDAY, NOVEMBER 23, 1929

LIMITATIONS OF DIETOTHERAPY IN EPILEPSY

The treatment of metabolic disturbances is facilitated by adjusting the diet to lessen the demands on the mechanism concerned or to provide additional amounts of an essential substance in the absence of which the disease arises. Thus the limitation of carbohydrate in diabetes, the control of the salt content of the ration in nephritis and the liberal use of cod liver oil in rickets illustrate the use of diet as an essential feature in combating these pathologic conditions. One of the most recent of such dietotherapeutic measures is the use of rations extremely rich in fat and poor in carbohydrate in the treatment of epilepsy. While this procedure is of proved efficacy, the rationale is not so apparent. In man, a diet whose energy is derived almost entirely from fat induces a disturbance of oxidative metabolism characterized by the appearance of beta-hydroxybutyric acid, acetoacetic acid and acetone in the blood and the urine. The peculiar efficacy of rations rich in fat has been attributed to the anesthetic action of these ketone substances in the tissues. This ketogenic diet, together with definite restriction of the ingestion of water, has proved to be the most promising type of therapy for the epileptic child. However, McQuarrie [1] has recently pointed out the limitation of such diets as ordinarily employed.

Since the dietary treatment of epilepsy must perhaps be continued throughout a long period in the life of the patient, it is extremely important to guard against the evil effects of any kind of food deficiency. Calories, protein, salts and vitamins must be provided not only for maintenance but also for growth. The usual practice for those employing the strongly ketogenic diets in treating epilepsy has been to allow one gram of protein for each kilogram of body weight. Using a group of epileptic children given high-fat ketogenic diets, McQuarrie has investigated the nitrogen balance under a variety of experimental conditions. A positive nitrogen balance was not obtained in any case with the conventional allowance of protein (one gram per kilogram of body weight) and the data indicate that double that quantity of protein is nearer the requirement. Attempts were not made in this study to determine the amount of protein necessary to satisfy the demands for growth apart from maintenance, though the failure to obtain a positive nitrogen balance was demonstrated in children ranging from 5 to 15 years of age. It appears that the resulting ketosis for which this type of ration is given increases the protein requirement considerably. Furthermore, since the seizures are best controlled by limiting the water given with the high-fat diets, the abnormal hydration of the tissues resulting from partial protein starvation has a tendency to defeat the object for which the peculiar regimen is instituted.

During the period of active growth there is normally a storage of protein in the form of new tissue, and a positive nitrogen balance is the rule during childhood. It is therefore highly desirable that, in any dietotherapeutic procedure designed in addition to facilitate normal development, the indispensable protein factor should be so adjusted as to permit its storage during the period of growth. In the case of the fat-rich diets used in the treatment of epilepsy the need for dietary protein is considerably enhanced by the accompanying ketosis, an added reason for a safe allowance of protein in the food. The vital equilibrium is so complex that only rarely is one adjustment in the environment made without involving the necessity of making various other changes; and practical procedures of the type here discussed are constantly in need of examination from apparently unrelated points of view lest the cure of one abnormality be accompanied by severe injury to other systems.

1. McQuarrie, Irvine: J. Nutrition **2**: 31, 1929.

THE PROGNOSIS OF INFANTILE TUBERCULOSIS

Tuberculosis in early infancy, as seen at the necropsy table, is an anatomic picture so unvarying in its major details as to be almost monotonous. At the hilum of the lung are one or more caseous lymph nodes, evidently actively tuberculous. Radiating from these into the lung is an area of caseous pneumonia of variable size. Studding both lungs are miliary and conglomerate tubercles, usually larger and apparently somewhat older than those seen in the spleen, liver, kidneys and other internal organs. The meninges at the base of the brain may be the site of caseous change which, in its diffuseness and extent, may be out of all proportion to the number of discrete tubercles present. Occasionally a focus of primary involvement of the lung parenchyma can be detected; often it cannot be found, being lost, if the process was ever localized, in the area of caseous pneumonia. For the physician who sees the young tuberculous infant, when the disease is in a stage which makes possible the diagnosis by physical examination,

the downward clinical course parallels the degree of anatomic involvement seen post mortem. The textbooks of pediatrics give the same gloomy view of the fate of the infant of one or two years of age in whom tuberculosis is detected. The disease, as seen at the bedside and on the postmortem table, suggests an entire absence, during the first year or two of life, of the resistance to the tubercle bacillus which characterizes the tissues of older persons; it suggests an inevitable progression against which the tissues are powerless and to which the infant succumbs. If, as many believe, the allergic state and the degree of immunity run more or less parallel in tuberculosis, the negative tuberculin skin reaction of the young infant with clinically recognizable tuberculosis might be interpreted as an entire lack of immunity, which manifests itself in generalization of the infectious process. Under such circumstances, obviously, the prognosis is extremely grave. If the allergic and the immune states do not necessarily go hand in hand, if the tuberculous infant may lose its allergic response as the disease becomes more active, if "the allergic hypersusceptibility leading to tissue damage and inflammation in certain bacterial infections" is, as Rich [1] of the Johns Hopkins School of Medicine has stated it, "an unfortunate accident, unnecessary for immunity," the outcome of infection in the young infant will depend not only on the degree of natural or acquired immunity which it possesses but also on the degree to which its tissues have been rendered susceptible to harm as the result of the hypersusceptibility of its tissues brought about by the infection during its initial stage. What happens to the young infant, infected for the first time by tubercle bacilli, depends therefore on the degree of natural immunity of the tissue first invaded, on the degree of acquired immunity which the localization evokes, on the degree of allergic tissue hypersusceptibility resulting from the first localization, and on the number of living bacilli and the amount of tuberculoprotein liberated by their disintegration. With so many variable factors, a variable prognosis might be expected.

Is the outlook for the infant infected by tubercle bacilli during the first year or two of life always the gloomy one of almost inevitable fatality? Is the prognosis, once the clinical diagnosis of tuberculosis has been made, necessarily as grave as clinical and pathologic evidence generally indicate? Gasul [2] of Chicago has presented the results of a follow-up study of 404 children in whom a diagnosis of tuberculosis had been made during the first two and one-half years of life at the Pirquet clinic in Vienna. The time of reexamination varied from one to eight years after the diagnosis had been recorded. The mortality rate of the entire group was 3.7 per cent. In twenty-nine infants infected during the first six months of life, the death rate was 17.2 per cent; in seventy-three infected during the second half of the first year, it was 6.8 per cent; in seventy-seven infected during the first half of the second year, it was 6.5 per cent; there were no deaths in children infected during or after the second half of the second year. A mortality rate of 3.7 per cent in infants infected during the first two and one-half years of life with a disease whose course at this early period has generally been considered a rapidly progressive one is astonishingly low. This offers a much more hopeful outlook than the usually accepted one. The exact death rate of infantile tuberculosis is probably not to be determined, even from so large a group as was studied. The number of children followed and reexamined constituted a little less than half of the 825 children of the same age group in whom the diagnosis had been made. It is probably safe to assume that many of those who did not return for reexamination had died. Furthermore, all cases in which a diagnosis of tuberculous meningitis, generalized miliary tuberculosis or tuberculous pneumonia had been made were excluded. This is the group which gives the impression of high mortality in infantile tuberculosis.

In the series studied, the diagnosis was based on a positive tuberculin skin reaction in 221, and on hilum involvement as detected roentgenologically in 121. Some question might be raised as to the infallibility of these diagnostic procedures. If recovery from tuberculosis contracted early in life were as frequent as the figures given indicate, one would expect to find evidences of quiescent or healed tuberculosis more often than is actually the case in any extensive series of necropsies of infants. In a series of seventy-five necropsies of tuberculous infants up to one year of age, from the Harriet Lane Home for Invalid Children of the Johns Hopkins Hospital, Katharine Merritt [3] of New York found tuberculosis to be a chance necropsy observation in only three. In these, the disease was so active or so advanced at the time of death that it would almost certainly have caused death in a short time if the infants had not been carried off by some other condition. The failure to find healed tuberculous lesions in young infants more frequently than is the case might be due to a more complete healing of the process at this early period of life than occurs later. Such an assumption is not, however, in accord with the increasing frequency of the Ghon tubercle, as detected fluoroscopically in the series studied by Gasul, with increasing length of time after the first recording of the diagnosis. The actual death rate of infantile tuberculosis probably lies somewhere between the pessimistic figure of 90 per cent and over, given by some textbooks of pediatrics, and the optimistic figure of 3.7 per cent, given by the Pirquet clinic material.

1. Rich, A. R.: The Rôle of Allergy in Tuberculosis, Arch. Int. Med. 43: 691 (May) 1929.
2. Gasul, B. M.: The Prognosis of Tuberculosis in Infants, Am. J. Dis. Child. 37: 909 (May) 1929
3. Merritt, Katharine: Tuberculosis in Infants Under One Year of Age, Am. J. Dis. Child. 38: 526 (Sept.) 1929.

HYPERPYREXIA PRODUCED BY BATHS

The optimism that has arisen in recent years regarding the therapeutic possibilities of new methods of intensive treatment of neurosyphilis has been promoted by the experience of inducing malaria or relapsing fevers in afflicted persons. Naturally, the introduction of one disease to subdue another seemed a formidable procedure to most persons who see the patient thus driven to face both Scylla and Charybdis. The exact nature of the physiologic reactions involved in this method is still somewhat uncertain, though there can be little doubt that the hyperpyrexia is an important element. This fact has directed attention anew to other means of inducing rise of temperature in the body, such as injection of foreign proteins and notably to balneotherapy.

A recent writer [1] has pointed out that the hot bath in the treatment of disease is one of the oldest therapeutic procedures. The ancient Egyptians, Greeks and Romans not only used this mode of treatment but worked out elaborate devices for its administration. The therapeutic possibilities of many of the thermal springs of western Europe were discovered by the Romans. In this stage of the clinical application of the bath, attention was centered largely on its temperature and little on the fever produced in the patient. This situation not infrequently resulted in fatalities.

Studies [1] at the neuropsychiatric clinic of the Stanford University Medical School in San Francisco tend to accentuate further the benign effects of febrile temperatures on certain neurologic conditions. The foremost precaution is to control the body temperature with great care. As is well known, this cannot always be done by observations of mouth temperatures which the local cooling of the nasopharynx tends to make low. Rectal readings are almost always more dependable. The Stanford technic consists in starting with baths at 110 F., the temperature being gradually reduced to correspond with the temperature of the patient. In the treatment for neurosyphilis it seemed desirable to raise the patient's temperature as high as is consistent with comfort and safety. The mouth temperatures were never less than 104 F. and preferably from 105 to 107. Patients varied greatly in their ability to tolerate high temperatures. Many needed encouragement during the first treatment; subsequent treatments were always easier to give. Fever resulting from baths can be maintained for one or even for two hours without danger to the patient.

Numerous observations by DeAsis [2] at the Worcester (Mass.) State Hospital lead him to the conclusion that malaria is of great value as a therapeutic agent in paresis. In the experience of Mehrtens and Pouppirt,[1] comparing the results produced by hot baths and the malarial treatment, the latter is simpler. It requires less cooperation on the part of the patient. The temperature can be maintained for several hours out of the twenty-four. There may be valuable factors in the toxemia apart from the fever. Fever produced by baths is under perfect control. It can be maintained at any degree or for any length of time up to two hours; it may be applied on alternate days or even on every third day if necessary. Baths may be continued daily for at least six weeks and the patient may still gain in weight and maintain his strength. They may be applied along with antisyphilitic therapy; it is even probable that the hyperpyrexia tends to intensify the therapeutic effect of the antisyphilitic medication. Neurosyphilis seems to offer the most favorable field for treatment by hyperpyrexia.

1. Mehrtens, H. G., and Pouppirt, P. S.: Hyperpyrexia Produced by Baths, Arch. Neurol. & Psychiat. **22**: 700 (Oct.) 1929.
2. DeAsis, Cesareo: Malaria as a Therapeutic Agent for Paresis, Arch. Neurol. & Psychiat. **22**: 752 (Oct.) 1929.

PHYSIOLOGIC LEUKOCYTOSIS

Every one who has occasion to "count blood corpuscles" frequently finds that even under normal conditions the total number of colorless cells in a unit volume of the circulating medium of any person shows considerable variation from time to time. Perhaps the most commonly discussed type of increase, that is, of physiologic leukocytosis, is that so frequently alleged to follow a meal. Obviously, such a postprandial leukocytosis needs to be borne in mind in attempting to evaluate the leukocyte count in the diagnosis of conditions in which increments might be significant. If the digestive cycle normally involves a mobilization of leukocytes, all "counts" after meals are subject to factors of correction by no means easy to estimate.

It was somewhat startling, therefore, to learn from Garrey of Vanderbilt University, Nashville, Tenn., at the recent International Physiological Congress in Boston that current conceptions of physiologic leukocytosis are in need of revision. According to the investigations of Garrey and Butler, a recumbent posture for one hour and state of complete mental and physical relaxation reduces the leukocyte count to a minimum—the basal norm. On eighty subjects the basal count was between 5,000 and 6,000, a few being lower; any variation in the basal count is a certain index of disturbance of the basal state. In a given individual the basal count is constant from day to day. A basal count of 7,000 or over in normal subjects is evidence of mental or physical unrest or discomfort. The largest possible meal will not cause the slightest increase in the basal leukocyte count, a crucial disproof of the existence of digestive leukocytosis.

This is, indeed, a somewhat new point of view. With respect to exercise it has long been appreciated that vigorous muscular activity may produce a leukocytosis. According to Garrey, passive or active postural changes raise the count instantly. The increase in the leukocyte counts is proportional to the severity of muscular exercise—in a quarter mile race lasting less than one minute

the count has been raised to 35,000 per cubic millimeter. Mild grade physiologic leukocytoses are due chiefly to an increase in the polymorphonuclear neutrophils. High grade leukocytoses may show a preponderance of lymphocytes. In a basal individual, nervous and psychic factors may induce a high grade leukocytosis. Acute cutaneous stimulation, as by a dash of ether, raises the count from 4,000 to 8,000 or even 10,000. Pain may raise the leukocyte count to 20,000 in a subject resting in bed and may be mistaken as indication of infection. A mental ("psychologic") test raises the basal count to an activity level, and the emotive states of apprehension, fear or rage likewise produce a marked leukocytosis. The changes are attributable to circulatory shifts with the liberation of leukocytes trapped in unused capillaries. This is not the first time of late that the potentialities of quiescent capillaries for altering circulatory conditions have been brought into prominence.[1]

SOME ASPECTS OF SERUM SICKNESS

The growing use of animal serums in the treatment of various infectious diseases has been attended with certain pronounced difficulties, represented foremost perhaps by what is termed serum sickness and anaphylaxis. The injection of horse serum into a sensitized person always involves a menace of some moment. Man is not immune to anaphylactic manifestations. According to Wells,[2] he may exhibit any or all of the symptoms seen in other animals, sometimes reacting like the dog with marked hepatic and splanchnic congestion; often, especially in asthmatic persons, developing bronchial spasm, but more often showing cutaneous lesions as the most obvious symptoms. Except for a small proportion of the population, however, man seems ordinarily not to be reactive, and monkeys also are inactive in respect to anaphylaxis, as well as to antibody formation in general. Nevertheless, according to Zingher,[3] serum sickness developed in 10 per cent of persons receiving serum injections as an antidiphtheritic measure, though the symptoms, with the exception of the urticarial rash, are rare when the concentrated and refined antitoxin is used.

The problem here presented is reflected in the growing effort to use a diversity of animal species for the production of curative serums so that the dangers arising from repeated injections at intervals may be averted. In cases in which there is a history of previous use of horse serum products, the source of sensitization is obvious. Untoward reactions are, however, sometimes observed in persons for whom no such history is obtainable. The suggestion has been made that in such instances a crossed anaphylactic relationship between horse dander and horse serum exists. Exposure to the former is obviously possible under many conditions.

The possibilities here involved have been denied;[4] but the studies of Ratner and Gruehl[5] at the University and Bellevue Hospital Medical College reopen the question. They conclude that horse dander and horse serum are antigenically related, the common substance being present in small amounts and related to the globulin fraction. This common substance is apparently present in smaller amounts in the horse dander than in the horse serum, since it is easier to sensitize an animal to horse dander and cause shock with horse serum than the reverse. Desensitization does not occur after recovery from a crossed shock injection. Nasal sensitization and respiratory anaphylaxis (asthma), induced in animals through the inhalation of dry horse dander, can result in horse serum hypersensitiveness, and such animals may be killed by an injection of horse serum antitoxic globulin. Ratner and Gruehl suggest, finally, that this mechanism of natural sensitization to horse serum through the inhalation of horse dander is related to the problem of the hypersensitiveness of man to horse serum.

Current Comment

BILIARY SECRETION AND DRAINAGE

Biliary drainage into the duodenum has attained considerable prominence as a therapeutic measure in recent years. There are obvious medical indications for promoting a vigorous flow of bile through its normal channels and into the bowel. Relief of certain types of "catarrhal" jaundice may be established thereby. Digestion may be promoted. Undue stasis in the gallbladder may be relieved. The difficulties in securing the desired ends have been augmented by the manifold functions of the entire biliary system. They include the secretion of the fluid by the liver, its passage along the eliminatory bile ducts, the storage and concentration features of the gallbladder, the motility of the latter, the dilution of the bile in the common duct, and the control of the so-called sphincter that helps to regulate biliary discharge into the bowel. Many of these features are subject to independent promotion, such as the hormonal augmentation of bile secretion, the contractility of the gallbladder, and the "relaxation" of the sphincter. Only in recent times has it become feasible to differentiate the varied functions in man. The visualization of the gallbladder by the introduction of dyes that are relatively opaque to the x-rays represents the contribution of cholecystelography. The use of the duodenal sound affords means for observing the rate of discharge of bile into the bowel and the character of the biliary

1. Krogh, A.: Anatomy and Physiology of the Capillaries, Yale University Press.
2. Wells, H. G.: The Chemical Aspects of Immunity, ed. 2, New York, Chemical Catalog Company, 1929.
3. Zingher, A., in Cecil's Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1927.
4. Longcope, W. T.; O'Brien, D. P., and Perlzweig, W. A.: The Antigenic Properties of Extracts of Horse Dander: I. Active Sensitization of Guinea-Pigs to Horse Dander Extract, J. Immunology **10**: 599 (May) 1925.
5. Ratner, Brent; and Gruehl, Helen L.: Anaphylactic Crossed Relationship Between Horse Dander and Horse Serum, Arch. Path. **8**: 635 (Oct.) 1929.

fluid. It is now known that different foods and drugs affect some of these actions in significant ways. Fats are unique in their effect. It has been found by Garbat and Jacobi [1] of the Lenox Hill Hospital, New York, that the instillation of various solutions high up in the lower bowel also may affect the secretion and expulsion of the bile. Physiologic solution of sodium chloride, for example, may induce a drainage of the bile into the duodenum. The New York clinicians remark that in former years irrigation of the colon was an established treatment for various types of jaundice. Their study offers the first proved experimental demonstration of the possible efficacy of this form of therapy. The mechanism whereby the drainage is achieved is either a direct stimulation of the cells of the liver from the absorption of the instilled fluids into the portal system or a reflex nervous phenomenon. The former is believed to be the more probable explanation. Garbat and Jacobi point out that the new method of bile drainage may prove of therapeutic importance in those cases in which bile drainage by means of Lyon's method is impossible or inadvisable.

THE PREVENTION OF MYOPIA

Kerr has stated that 10 per cent of the children in English primary schools are myopic. According to Cohn, the proportion of short-sightedness in the higher schools in Germany is not less than 60 per cent. Whatever the exact proportion of short-sighted children in this country may be, the total number is certainly large. Is this condition inevitable? As long ago as 1916, Pollock of Glasgow observed that short-sighted children put on a regimen of complete rest for the eyes not only held the myopia in check but actually, in some cases, recovered a part of the vision that they had lost. In a recent publication, F. A. Newman [2] of Melbourne, Australia, advances a theory of the etiology of acquired axial myopia and makes definite recommendations for its prevention. He suggests that the primary lesion in this disease is to be found in the elastic membrane of the choroid; that this membrane may be weakened either by heredity or by poor conditions of nutrition in early life, either prenatal or postnatal, and that the "exciting cause" of the myopia, acting on this weakened elastic membrane, is excessive accommodation and the use of the eyes under poor conditions. From these considerations, the indications for preventive treatment are readily derived. Children of myopic parents demand extra care. The nutrition of the mother during pregnancy and of the growing child must be safeguarded. When the child begins to read, the eyes must not be approached too near to the printed page. In a series of observations made on children aged from 8 to 12 with normal vision, it was found that many brought their eyes much too near the print, the average distance being only 8 cm. This means that they were using 12 diopters of accommodation, having only 2 diopters in reserve. According to Newman, not more than 60 per cent of the accommodation should regularly be employed. This means that, in writing or reading, the eyes should be distant from the work, at 7 years, 23 cm.; at 9 years, 26 cm., and at 11 years, 28 cm. Home lessons should not be given before the age of 12 years, and during the critical age of puberty excessive study is to be avoided. Frequent routine examinations are necessary to detect commencing myopia. When static refraction is + 1.00 D. or under, or when a low grade of myopia is already present, active treatment is indicated. This includes rest of the eyes by avoidance of close work and by paralysis of accommodation for the space of two months, attention to nutrition, and the prescription of physical exercise. By these means it is hoped that many children may be saved the necessity of a life-long addiction to corrective lenses.

1. Garbat, A. L., and Jacobi, H. G.: Secretion of Bile in Response to Rectal Instillations, Arch. Int. Med. **44**: 455 (Sept.) 1929.
2. Newman, F. A.: Acquired Axial Myopia, Am. J. Ophth. **12**: 714 (Sept.) 1929.

VITALISM VERSUS MATERIALISM IN IMMUNOLOGY

The mid-Victorian controversy between the vitalistic and the materialistic school of physiology has a faint echo in recent attempts to explain specific antibody formation on a purely chemical basis. Most immunologic theories assume that the human body is animated, dominated, motivated and coordinated by a nonmaterial "unit vital force" or "purpose." This nonmaterial "purpose" is sufficiently powerful to cause a complete destruction or elimination of nonlethal doses of injected antigens. So-called antibodies are thus purposeful, defensive internal secretions, material expressions of this unifying "vital will." Rarely has orthodox immunology questioned the truth of these two basic assumptions. Recently Manwaring [1] cited data which lead him to believe that such a vitalistic hypothesis is unnecessary and that "antibody" production can be fully explained as a result of chemical readjustment between injected antigens and tissue colloids. According to this nonvital chemical hypothesis, injected antigens are gradually "hybridized" with normal body colloids; chemical processes that can readily be duplicated in the laboratory. The resulting "hybrid products" are assumed to become semipermanently incorporated in or "symbiotic" with living tissues and body fluids. The resulting "hybrid retention products" are the test tube "antibodies" of current nomenclature. According to this theory it is no longer necessary to assume that test tube "antibodies" are purposeful defensive internal secretions. Test tube titer would not necessarily bear quantitative relationship to somatic immunity. Such a theory would consistently explain the thus far apparently illogical clinical failure of so many commercially exploited prophylactic and therapeutic "antiserums." The older orthodox or vitalistic concept of immunologic adaptation is not, for the most part, clinically verifiable.[2] If the suggested materialistic concepts should yield material for further verification, clinical medicine would be amply repaid for the decade of painstaking laboratory experimentation that would be necessary to establish or discard the suggested theory.

1. Manwaring, W. H.: Immunological Prophecy from Ancient Hieroglyphics, Science **70**: 1 (July 5) 1929.
2. Manwaring, W. H., and Krueger, A. P.: Laboratory-Endorsed Therapeutic Agents: Mathematical Calculation of Their Probable Clinical Value, J. A. M. A. **93**: 95 (July 13) 1929.

Association News

ANNUAL CONFERENCE OF SECRETARIES

The annual conference of the secretaries of the constituent state medical associations was held at the headquarters office of the Association, November 15 and 16. The following program was presented:

FRIDAY, NOVEMBER 15—10 A. M.

Opening Remarks. Edward B. Heckel, Chairman, Board of Trustees of the American Medical Association, Pittsburgh.

The Public Activities Committee of the Nebraska State Medical Association. E. R. Hays, Falls City, Neb.

A State Medical Association Constitution and By-Laws. George H. Kress, Los Angeles.
Discussion opened by Don K. Martin, Columbus, Ohio.

Why a State Medical Journal? J. H. Musser, New Orleans.
Discussion opened by Frank C. Hammond, Philadelphia.

FRIDAY, NOVEMBER 15—2 P. M.

The Present Status of Industrial Medicine. Carey P. McCord, Cincinnati.

Some Important Problems. Holman Taylor, Fort Worth, Texas.
Discussion opened by E. A. Hines, Seneca, S. C.

SATURDAY, NOVEMBER 16—9 A. M.

Descartes Was Right. Harry M. Hall, Wheeling, W. Va.

Quo Vadis? L. B. McBrayer, Southern Pines, N. C.
Discussion of papers of Drs. Hall and McBrayer opened by F. C. Warnshuis, Grand Rapids, Mich.

Approximately fifty-three secretaries of state medical associations and editors of state medical journals were in attendance, as were also the officers of the Association and the members of the Board of Trustees. A feature of the occasion was the presentation to Dr. Olin West, secretary and general manager of the Association, of a watch in testimony of the affection and esteem of the secretaries and editors. The presentation was made by Dr. F. C. Warnshuis, speaker of the House of Delegates and secretary of the Michigan State Medical Society.

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10 o'clock Central Standard Time, with the exception of Friday, when the health message is delivered at 9:45, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of November 25-30 is as follows:

November 25. "The Middle Aged Woman," by Dr. John M. Dodson.
November 26. "The Middle Aged Woman," by Dr. John M. Dodson.
November 27. "Fat Cures," by Dr. Arthur J. Cramp.
November 28. Holiday.
November 29. "The Unloved Child," by Dr. R. G. Leland.
November 30. "Medical News," by Dr. J. F. Hammond.

Evening Health Hints from Hygeia, 8 o'Clock Central Standard Time

November 25. Hints for Keeping Healthy.
November 26. Milk and Fish Tabu is Groundless.
November 27. Lest You Should Have Trench Mouth.
November 28. Give the Children a Chance to Study.
November 29. Taking Care of Milk.
November 30. Now That He is Six.

Gastrojejunal Ulcer.—The medical management of gastrojejunal ulcer is never satisfactory. When such complications occur and come to surgery, a partial gastrectomy should always be done. Even after gastric resection there is a possibility that a gastrojejunal ulcer may form. Balfour and others have reported several such cases. We have just operated on a patient who developed a marginal ulcer at the site of the gastric resection done two years ago. It was necessary to disconnect the entire anastomosis, resect the ulcer and reset the gastrojejunal anastomosis a little lower on the jejunal loop. This complication, however, is not so common after the resection operation as it is following simple gastro-enterostomy.—Sanders, R. L.: Surgical Lesions of the Duodenum, *Northwest Med.*, November, 1929.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—An explosion occurred in the roentgen-ray department of the University of California Hospital, San Francisco, November 18, causing several thousand of dollars' damage by fire; of the 216 patients in the hospital, 102 were moved to other buildings for safety, but no one is reported to have been seriously injured and the fire was confined to four rooms and the corridors.

Personal.—Mr. H. D. Chope of the department of epidemiology and public health of Stanford University School of Medicine, San Francisco, while conducting experimental investigations, became infected with the fungus *Coccidiodes immitis* and now has coccidiodal granuloma of the lungs.——City Manager Watkins of Pittsburg has appointed Miss Alice Baker, a nurse, deputy city health officer, it is reported, to be in charge of the health center.

Mexican Births in California Increase.—In the rural districts of Imperial County, 52 per cent of all births in 1928 were Mexican, and in the rural districts of San Bernardino and Riverside counties more than 40 per cent of the births were Mexican. In some cities of Imperial County, the Mexican births were 60 and 70 per cent of all births. The California State Department of Health shows that in 1926, Mexican births in the state amounted to 14.2 per cent of all births; in 1928, to 16.6 per cent; and from January to June, 1929, to 17.7 per cent. This is to be expected in the extreme southern part of the state where it is a simple matter to cross the line. The health department says that there is a beginning invasion into the San Joaquin Valley and into some counties of northern California. A new health problem is thus introduced, as some of these immigrants bring disease with them, and they have a lack of immunity to many diseases which prevail in this country. It is essential, therefore, that the health of the Mexican population be safeguarded as a matter of protection to the health of the entire state.

CONNECTICUT

Regulating Sanitation in Barber Shops.—A certificate of registration is now issued by the state board of barbers to shops which pass inspection. The board examines barbers to see that they are free from contagious diseases and inspects their shops to see that they meet the standard of sanitation. The board requires that there shall be individual head rest covering for each person served and that the same solid piece of soap shall not be used for more than one customer; that every barber shall thoroughly cleanse his hands immediately before serving a customer, and that instruments used shall be sterilized after each separate use either by boiling in water for five minutes or by some other approved method. The use of powder puffs and sponges is prohibited as well as the use of styptic sticks or pencils. The board forbids barbers to serve any person suffering from an eruption of the face, scalp or neck or from any communicable disease.

Yale Appoints a Professor of Psychiatry from Munich.—President Angell of Yale University announced, November 14, the appointment of Dr. Eugen Kahn of Munich, Germany, as professor of psychiatry and mental hygiene in Yale University School of Medicine. The Rockefeller Foundation has pledged $100,000 a year for ten years toward a program to develop the study of psychiatry and mental hygiene at Yale. Dr. Kahn's appointment is among the first in connection with this program. The foundation also is providing funds for the Institute of Human Relations building. The Commonwealth Fund is making an annual allowance of $50,000 for the development of a mental hygiene program. Dr. Kahn for years worked with the late Dr. Emil Kraepelin. When Dr. Kraepelin decided, in 1925, to give his whole time to the German Psychiatric Research Institute in Munich, which he had founded, he left the active direction of the psychiatric and nerve clinic at the University of Munich to Dr. Kahn, who has since been professor there. Dr. Kahn will return to New Haven in March. He will assist in equipping the institute building, which will have facilities for the care of fifty persons, some of whom will be of inferior mentality, and others of average and superior mentality. The keynote of this work is to be the prevention of mental disease by tracing it to the contributing factors and origins.

ILLINOIS

Prevalence of Diphtheria Doubled.—The state health commissioner stated, November 13, that diphtheria was being reported in Illinois at the rate of about 200 cases a week and that the prevalence has more than doubled in the last two months. Illinois now has, he said, more diphtheria than any large state in the union. The number of cases reported now is 25 per cent above that for the corresponding period of 1928 and higher than for any previous year since 1923. Reports are coming from widely separated points in Illinois, indicating that exposure has been extensive and that the development of cases at almost any place may be regarded without surprise. In view of the late arrival of fall, the commissioner believes that the prospects favor a greater increase.

Society News.—Dr. Charles Mayo, Rochester, Minn., addressed the Winnebago County Medical Society, Rockford, November 5; Dr. Plinn F. Morse, Detroit, spoke on diseases of the gallbladder.——The medical societies of Henry, Knox and Warren counties, Kewanee, were addressed, October 10, by Drs. George H. Coleman, Chicago, on blood pictures in health and disease, and Bayard Holmes, Chicago, on tumors of the mediastinum; Gilbert Fitzpatrick, Chicago, exhibited the Canti cancer film.——Dr. Clement L. Martin, Chicago, addressed the Bureau County Medical Society, November 14, on "Treatment of Hemorrhoids by Nonsurgical and Operative Methods."——Dr. George L. Apfelbach, Chicago, will give an operative clinic before the Oelwein County Medical Society and present a paper on "Surgery in Diabetics," November 26.

Chicago

Personal.—Dr. Solomon Strouse, associate clinical professor of medicine, Rush Medical College, addressed the Cincinnati College of Medicine, November 14, on "Obesity."——Dr. Rollin T. Woodyatt is reported to have been bequeathed about $276,000 by the will of the late William Liston Brown, formerly of Chicago, who died, November 1, at Pasadena, Calif., aged 87.

University News.—Miss Gwethalyn Jones has given the University of Chicago $25,000 to be added to the Frank Billings Clinic Fund. Dr. Walter H. O. Hoffmann has given $20,000 to the university subject to an annuity to himself, but to be used on his death preferably to support and develop teaching and research in the care of children.

Society News.—The Medico-Historical Club of the University of Illinois College of Medicine was addressed, November 7, by Dr. Hugh A. McGuigan on "A Sabbatical Year in Europe," illustrated with lantern slides.——Dr. Carl Henry Davis, Milwaukee, was elected president of the Chicago Gynecological Society at the fifty-second annual meeting, October 11, and Dr. Sydney S. Schochet, secretary.——The Chicago Medical Society was addressed, November 13, by Dr. Archibald L. Hoyne on the prevention of contagious diseases.——The Chicago and Milwaukee roentgen-ray societies met jointly at the Virginia Hotel, November 14; Drs. Eben J. Carey, Milwaukee, spoke on "Physiology and Pathology of Bone Growth"; Fred J. Hodges, Madison, on "The Teaching Value of a Roentgen Film," and Frank W. MacKoy, Milwaukee, on "Gastro-Intestinal Diverticula and Associated Diseases."——The Chicago Tuberculosis Society was addressed, November 14, by Dr. Philip H. Kreuscher on differential diagnosis, pathology and treatment of surgical tuberculosis, and by Dr. Theodore Cornbleet on "Medical Aspects of Cutaneous Tuberculosis."——Dr. Carl J. Wiggers of Western Reserve University School of Medicine, Cleveland, addressed the Chicago Medical Society, November 20, on "The Clinical Physiology of Aortic Insufficiency."——Dr. Frederick P. Moersch, Rochester, Minn., addressed the Chicago Neurological Society at the Medical and Dental Arts Club, November 21, on "Paroxysmal Tachycardia."——The city health commissioner, Dr. Arnold H. Kegel, was the guest of the council of the Chicago Medical Society at its November 12 meeting, at which he stated that he desired the council to know that he welcomes suggestions for the betterment of the public health of the community.——The cornerstone of the New Bethany Hospital, Trumbull Avenue and Van Buren Street, was laid Sunday, November 3.

KANSAS

Hospital News.—The Kansas Hospital Association held its sixteenth annual meeting, October 26, at Lawrence, and will hold its next annual meeting at Newton. Dr. Bert W. Caldwell, Chicago, executive secretary of the American Hospital Association, Dr. Benjamin A. Wilkes, superintendent, Missouri Baptist Hospital, St. Louis, and Dr. John N. Sherman, Chanute, gave addresses. Dr. Joseph C. Bunten, Augusta, president, Kansas Hospital Association, presided. Dr. T. R. Heath, Kansas City, was made president for next year.

Society News.—The Solomon Valley Medical Society was addressed, recently, at Minneapolis, Kan., by Dr. Earl L. Vermillion, Salina, on "Chronic Constipation," and by Dr. Edwin D. Ebright, Wichita, on "Fractures in the Aged."——It is reported that 902 students in the Oxford, Caldwell and Conway Springs schools were immunized in September against diphtheria by means of toxin-antitoxin.——Dr. James G. Carr, Jr., of Northwestern University Medical School, Chicago, addressed the Shawnee County Medical Society on "Etiology and Significance of Cardiac Pain."——The Dickinson County Medical Society, Enterprise, was addressed, October 24, by Dr. Elmer J. Reichley, Herington, on eclampsia.——Dr. James R. Elliott, Kansas City, Mo., addressed the Clay County Medical Society, October 16, on "Fractures of the Spine," illustrated.——At the annual meeting of the Franklin County Medical Society, Ottawa, among others, Drs. Granville S. Hanes, Louisville, Ky., spoke on "Treatment of Pruritus Ani and Vulvae"; Charles H. Neilson, St. Louis, on headaches, and Clifford C. Nesselrode, Kansas City, on "Treatment of Pulmonary Empyema."

LOUISIANA

Personal.—Dr. Olin W. Moss was appointed a member of the Lake Charles Board of Health, October 23, to succeed Dr. Louis A. Hebert, resigned.——The governor has appointed Dr. John B. Benton of Minden a member of the state board of medical examiners, succeeding Dr. Edmund L. Leckert, New Orleans, whose term expired.

Society News.—Dr. Philip Jeansonne addressed the Avoyelles Parish Medical Society, Bunkie, October 16, on "Tetanus." The society will meet next at Plaucheville, December 11.——Dr. Arthur Vidrine, New Orleans, addressed the Seventh District Medical Society at Welsh, September 12, on "The Stump of the Appendix"; Dr. Emmett L. Irwin, New Orleans, on "Dislocation of the Semilunar Bone of the Wrist," and Dr. John Signorelli, New Orleans, on infant feeding.——Dr. David L. Watson, New Orleans, presented a preliminary report on "Intrapulmonary Injections for the Treatment of Tuberculosis," recently, before the Clinical Society of the Presbyterian Hospital of New Orleans.

MARYLAND

Dr. Chesney Appointed Dean at Johns Hopkins.—The Chicago *Tribune* notes that Dr. Alan M. Chesney has been appointed dean of the medical school of Johns Hopkins University, succeeding Dr. Lewis H. Weed, who had occupied the position for two terms of three years each. Dr. Weed, who has been carrying on the duties of professor of anatomy as well as those of dean, asked to be relieved to devote his time to the work in anatomy. Dr. Chesney has been associated in medicine at the university since 1921.

Dr. Norris Honored.—Dr. Amanda T. Norris, who has been practicing medicine for fifty years in Baltimore, was tendered a dinner by the Women's Medical Society of Maryland, November 9, when the society celebrated its fifteenth anniversary. Dr. William H. Welch, professor of the history of medicine, Johns Hopkins University, and former director of the school of hygiene and public health, was the principal speaker. Dr. Howard A. Kelly gave a history of women in medicine; Dr. Patience S. Bourdeau Sisco, a sketch of the local society, and Dr. Louise Tayler Jones, Washington, spoke on the International Association of Medical Women. Other speakers were Dr. Ellen C. Potter, formerly president, National Women's Medical Association, and Dr. Amelia Frances Foye of the District of Columbia Women's Medical Society. On graduating from the Woman's Medical College of Pennsylvania in 1880, Dr. Norris was appointed to the faculty of the Maryland Medical College, which went out of existence when Johns Hopkins University School of Medicine was established and the Women's Medical College of Baltimore opened. Following the admission of women to Johns Hopkins, the Women's Medical College of Baltimore closed.

MASSACHUSETTS

Society News.—During the next few weeks the campaign to finish raising $650,000 for an addition to the Boston Medical Library will be resumed. The new addition is expected to provide for the growing operations of the library, to relieve the present crowded conditions, and to accommodate the headquarters of the Massachusetts Medical Society.——Dr. Cecil K. Drinker, Boston, addressed the Harvard Medical Society, November 12, on "Lymphatics and Lymphatic Drainage."——Dr. Lloyd Vernon Briggs, Boston, was elected president of the Massachusetts Psychiatric Society at the annual meeting, October 30, which was addressed by Dr. Milton C. Winternitz, dean, and Anthony N. Brady professor of pathology, of Yale

University School of Medicine, on "Origin and Purposes of the Institute of Human Relations."——The Lawrence Medical Club celebrated its fiftieth anniversary, October 28, at a dinner in the general hospital in Lawrence. The only surviving charter member of the club, Dr. Octavius T. Howe, Boston, was unable to be present on account of illness.——Dr. Albert Warren Stearns, the newly appointed state commissioner of correction, gave an address at the Community Church, Symphony Hall, Boston, November 10, on "A Doctor Analyzes Sin."

China and India Used Finger Print System Long Ago.—In reporting the October 2 meeting of the Massachusetts Medico-Legal Society at the Harvard Medical School, the *New England Journal of Medicine* abstracts an address by James R. Claflin of the Boston bureau of identification on "Identification in Its Medico-Legal Relations." Mr. Claflin reviewed the methods of identification that have been used in Boston as far back as seventy years ago, when front view photographs were used; following that method, the Bertillon system of measurements of various parts of the body, was introduced and still later the finger print method was adopted. The one defect in the Bertillon system was that of measuring some criminals in the adolescent age. These measurements changed when the criminal grew older. He said that the finger print system was first put in use as a means of identification of criminals in 1901 by Sir Edward Henry, but it was not his invention. Finger prints had been used in China on papers showing the ownership of lands, and in India to identify coolies hundreds of years before. Mr. Claflin illustrated by lantern slides how finger prints vary in the outlets of the sweat glands, and in the degree of wear they receive such as those of plasterers, for example; but as yet there has been no difficulty in identification by the finger print method. The system is so perfect that even in the largest collection, the classification at the top of the card will find a man in five minutes. These classifications together with finger prints and photographs may be sent by telephoto anywhere. Finger prints have been proved accurate for purposes of identification of a human body that has been dead half a year.

NEBRASKA

Hospital News.—The citizens have contributed or pledged $150,000 in a campaign ended November 7 to build a 100 bed general hospital at North Platte, and as soon as a sufficient amount of this money has been paid in, work will start on the building. The chairman of the board of directors of the new hospital is ex-Governor Keith Neville.

Personal.—Dr. Edward Tanner, Battle Creek, Neb., was guest of honor at a testimonial dinner given by the physicians of Madison County, October 3, to celebrate his completion of fifty years in the practice of medicine. Dr. Tanner has been practicing in Battle Creek since 1881.——Dr. Frank A. Brewster, Holdrege, has used an airplane for long trips in his practice for the last ten years.

Society News.—The Omaha-Douglas County Medical Society was addressed, November 12, by Dr. Louis E. Moon on "Proctitis and Its Relation to Colitis."——The Canti cancer film was exhibited at this meeting.——The Dawson County Medical Society was addressed, October 19, at Cozad by Dr. Francis A. Long, Madison, on "Medical Economics and the Country Doctor."——The Madison Five Counties Medical Society was addressed at Creighton, recently, by Drs. Albert J. Schwedhelm on "Impressions of Pediatric Trends."——The Seventh Councilor District Medical Society met at Crete, October 24; Drs. August N. Anderson, Belvidere, spoke on treatment of spinal curvatures by corrective exercises; Elmer M. Hansen, Lincoln, on "Injuries of the New-Born Child During Birth and Their Treatment," illustrated by motion pictures, and Palmer Findley, Omaha, on "State Medicine."——Dr. Archibald F. O'Donoghue, Sioux City, Iowa, addressed the Cedar-Dakota, Dixon, Thurston and Wayne Counties Medical Society at Walthill in September on "Hip Fractures," illustrated.

NEW JERSEY

Illegal Practitioners Prosecuted.—The board of medical examiners of New Jersey reports that the following persons recently pleaded guilty to practicing medicine without a license and paid the penalty:

Florence Marco, licensed midwife, Jersey City.
Mary M. Summers, who conducted the Institute of Christian Psychology of Plainfield.
Agnes Nipping, connected with the Somerville Health Resort, Somerville.
Frank J. Liddy, M.D., Mahwah.
Harry B. Hart, Elizabeth.
Samuel Kahn, a druggist of Somerville.
Ellsworth Pierce, naturopath, Bridgeton. (He continued practicing at Ocean City and was again arrested on September 4. This case is now pending in the court of common pleas of Cape May County.)
Lewis Hoffman, Pleasantville.
August Ohlendorf, Jersey City. (He refused to pay the penalty and was committed to jail for five days.)
Joseph F. Iuliani, M.D., Newark.
Arnold C. Stanford, druggist of Carlstadt.
Don D. Modica, Atlantic City.
Louis Simons, druggist of Lyndhurst.
Luisa Bocchio, who specialized in the treatment of cancer.
Leslie Paxon, owner of a drug store in Beach Haven.
Caroline Bateman, physical therapeutist, who was practicing in Beach Haven during the summer.
Ehrgott W. Gebhardt, druggist of Merchantville.

The following persons were found guilty of practicing medicine without a license: Emile Carpentier, Hillsdale, who paid the penalty, an appeal being filed; Robert Simpson, licensed osteopath of Newark, who paid the penalty; Norman Heiman, unlicensed chiropractor of New Brunswick, who was committed to jail for five days. He had been previously found guilty of practicing medicine without a license.

NEW YORK

Society News.—The Medical Society of the County of Albany was addressed, November 13, by Dr. Charles A. Elsberg, professor of neurologic surgery, Columbia University College of Physicians and Surgeons, New York, on "Symptoms and Signs of Tumors of Brain and Spinal Cord That Are of General Interest, with Remarks on Newer Methods of Surgical Treatment."——The state and county medical societies and other community and civic organizations cooperated in a public health week program, in Albany County, November 18-23. The speakers were George E. Vincent, Ph.D., of the Rockefeller Foundation; Dr. Hugh S. Cumming, surgeon general of the U. S. Public Health Service; Dr. Joseph Colt Bloodgood, Baltimore; Dr. William H. Ross, Brentwood, president elect of the state medical society; Dr. Edward L. Keyes, New York; Dr. C. Ward G. Crampton, New York; Dr. Burton T. Simpson, and Mr. Homer Folks, New York, and Miss Grace Abbott of the U. S. Children's Bureau. Many local physicians gave health lectures. There was a health exhibit all week at Chancellors Hall, Albany.

New York City

Dr. Vincent Retires as President of Rockefeller Foundation.—At a meeting of the trustees of the Rockefeller Foundation, November 13, Max Mason, Ph.D., formerly president of the University of Chicago, was elected president of the foundation to succeed George E. Vincent, Ph.D., who will retire, January 1, having reached the age limit. Dr. Vincent has been president of the foundation since May 15, 1917. Dr. Mason was assistant professor of mathematics at Yale, 1904-1908, and professor of mathematical physics at the University of Wisconsin from 1908 to 1925.

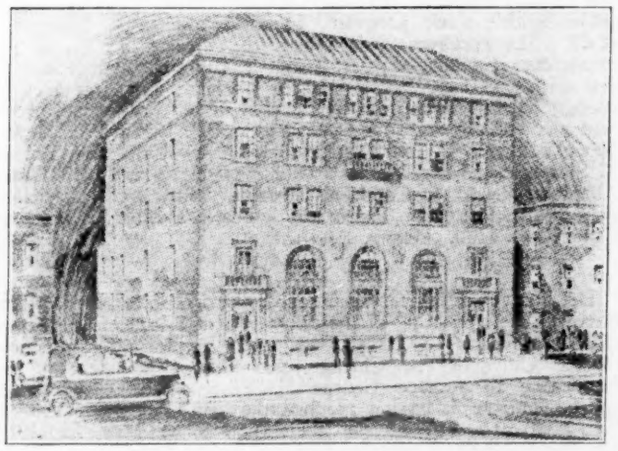
Board of Education Distributes Health Leaflets.—In the campaign being carried on by the five county medical societies to interest the public in periodic health examinations, the cooperation of the board of education is taking the form of the distribution of 1,500,000 leaflets among school children. It is considered desirable to educate the public on the importance of periodic physical examinations from the earliest age, and to imprint in the growing generation the habit of health examination. The leaflet urges parents to have a health examination for themselves and their children and gives a frequency schedule of health examinations to be followed according to the age scale.

How to Conduct Health Examinations.—In connection with the campaign of the five county medical societies of greater New York to interest the public in periodic health examinations, a symposium on how to conduct physical examinations was presented at the New York Academy of Medicine, November 18. Dr. George W. Kosmak, vice president of the Medical Society of the County of New York, introduced the program, and Dr. Frederick W. Bancroft presided. Drs. Louis Casamajor, professor of neurology, Columbia University College of Physicians and Surgeons, John M. Wheeler, professor of ophthalmology, Columbia University College of Physicians and Surgeons, Westley M. Hunt, clinical professor of otology at University and Bellevue Hospital Medical College, and Henry S. Dunning spoke on the relation of the various specialties represented by their departments to periodic health examinations; there was also an open forum. This symposium was presented also at the headquarters of the Medical Society of the County of Kings in Brooklyn, the following day.

Personal.—Dr. George G. Ornstein has been appointed associate clinical professor of medicine at the New York Post

Graduate Medical School and Hospital.——Israel S. Kleiner, Ph.D., has been given a grant by the Littauer Foundation to carry on studies on diabetic blood sugar.——Dr. Margaret E. Fries has been appointed chief of the pediatric department of the New York Infirmary for Women and Children.——Columbia University conferred at its convocation, Octobar 31, the honorary degree of doctor of science on the following physicians: Walter J. Barlow, Los Angeles, William C. Braisted, surgeon general, U. S. Navy, retired, William Darrach, James A. Miller, Alfred Owre, Walter W. Palmer, Henry H. Rusby, Newark, N. J., Frederick Tilney, Allen O. Whipple, and Hans Zinsser, Boston.——Dr. Ira I. Kaplan has been appointed head of the new malignant division of the department of hospitals and will serve without salary. Dr. Kaplan graduated at Columbia University College of Physicians and Surgeons in 1914. He is also assistant director of radiology in the department of hospitals.——Dr. Louis R. Grote of the von Noorden Clinic, Frankfort-on-the-Main, Germany, is visiting this country in response to invitations from various medical institutions, at which he will discuss the latest investigations of the von Noorden Clinic and disorders of metabolism. This is his first visit to America; Dr. Grote's father formerly was director of the Museum of Natural History in Buffalo.

Queens County Invites Public to Housewarming.—With its new home at Seventy-Sixth Street and Queens Boulevard in Forest Hills nearing completion, the Medical Society of the County of Queens announces that it will hold a bazaar and public health exhibit at the new building, December 7-14. Everybody in Queens is requested and expected to help make



the bazaar a success, as it offers an unusual opportunity for the public to see what its physicians are endeavoring to do in maintaining higher standards of public health and medical service. The executive committee for the bazaar and exhibit comprises all the members of the society and their wives, and some other friends. Mayor Walker will attend the opening. Entertainment will be provided each night. The proceeds derived from the sale of tickets (admission 50 cents) and the sale of Christmas goods at the booths will be used to help furnish the building and install a library. To stimulate interest, prizes will be offered, including several automobiles, an electric refrigerator, a radio set and a complete golf outfit. Thousands of keys to a treasure chest will be distributed. The valuable prize therein will be awarded to the person whose key opens the chest. The Medical Society of the County of Queens represents the largest area in New York City; although the society was organized in 1806, it never before has owned its own home. What better occasion could there be for every resident in Queens to become acquainted with its protectors of public health? The new building, the health exhibit, and the bazaar will welcome them all, December 7-14.

OKLAHOMA

Personal.—The War Department has awarded Dr. William McIlwain, Lone Wolf, the Distinguished Service Cross for gallantry in action while serving with the "Lost Battalion" during the World War in France.

State Distributes Quinine for Malaria.—There were 1,771 cases of malaria, according to the Oklahoma State Health Department, during August and September. Antimalaria campaigns are being conducted in several counties at present and the state health department is distributing hundreds of thousands of capsules of quinine to those infected in these counties.

Second Annual Clinic.—The Tulsa Academy of Medicine held its second annual clinic day, November 18, at the Plaza Theater. The speakers and clinicians were Drs. Henry J. John, Cleveland, Ohio, on "Diabetes"; Fred W. Rankin, Rochester, Minn., on "Surgical Lesions of the Colon"; Hugh McCulloch, St. Louis, on "Heart Diseases of Childhood," and Frank J. Hall, Kansas City, on "Tumors." Each of the guests also held a clinic.

PENNSYLVANIA

Society News.—Dr. Lloyd E. Wurster, Williamsport, addressed the Union County Medical Society, Lewisburg, October 24, on "X-Ray, Its Indications and Limitations," illustrated with slides. Motion pictures showing the method of preparing antivenom and the characteristic appearance of the poisonous snakes of America were exhibited.

Directors Pay University's Debt.—The provost of the University of Pennsylvania announced at a dinner, November 15, that forty members of the board of trustees have contributed $1,750,000 to clear the University of Pennsylvania of indebtedness and to provide the nucleus for an adequate endowment fund. Of this amount, $750,000 will be used to endow professorships. The provost is reported to have said that the greatest need of the University of Pennsylvania is unrestricted endowment. Pennsylvania has the second largest faculty and the third largest student body in the United States, but is surpassed by fifteen other universities in the amount of endowment.

Philadelphia

Society News.—Among the public health talks being given under the auspices of the Philadelphia County Medical Society at its headquarters are those of Dr. Moses Behrend, November 12, on "Indigestion"; Dr. Thomas B. Holloway, November 26, on "Practical Points on the Care of the Eyes"; Dr. Sigmund S. Greenbaum, December 10, "Care of the Hair"; Dr. Gordon J. Saxon, December 17, "Dietetics," and Pascal Brooke Bland, January 14, "The Prospective Mother."——Dr. Leopold S. Vaccaro has resigned as assistant immunologist in the department of health and as a member of the staff of the Philadelphia General Hospital.——Dr. Arthur P. Hitchens of the U. S. Army Medical Corps addressed the section on public health and industrial medicine of the Philadelphia College of Physicians, November 22, on "Public Health in the Philippine Islands with Special Reference to the Management of Leprosy, Intestinal Infections and Tuberculosis."

VIRGINIA

State Medical Election.—At the sixtieth annual meeting of the Medical Society of Virginia in Charlottesville, October 24, Dr. Charles R. Grandy, Norfolk, was made president; Dr. James A. Hodges, Richmond, president elect, and Drs. Rufus L. Raiford, Franklin, John A. Gibson, Leesburg, and Francis H. Smith, Abingdon, vice presidents. The next annual meeting will be held at Norfolk.

Loan Fund for Students.—The president of the Medical College of Virginia, William T. Sanger, announced, October 17, that a loan fund for students has been endowed by Seymour A. Strauss of New York with a gift of $10,000. The fund will be named in memory of the late Lewis Z. Morris, who for many years was chairman of the executive committee of the board of visitors of the college. Worthy students of the schools may secure loans from the interest that accumulates on this fund.

Society News.—The Virginia Pediatric Society, Charlottesville, was addressed, October 23, by Dr. James Buren Sidbury, Wilmington, N. C., on "Transfusion in Infancy and Childhood."——The Clinch Valley Medical Society elected Dr. Joseph B. Wolfe, Jr., Coeburn, president at its September 28 meeting, which was held in Norton.——The Seaboard Medical Association of Virginia and North Carolina will meet at Newport News, December 3-5. The opening address will be given by Dr. Howard A. Kelly, Baltimore, on "The Doctor as a Moral Leader in the Community."

WASHINGTON

Personal.—Dr. William C. Cox, Everett, was guest of honor at a dinner, October 10, given by the Snohomish County Medical Society. Dr. Cox, who is leaving for California, was presented with traveling bags. He practiced in Everett for many years, was a member of the first city council and served two terms as mayor. Dr. Harry R. Secoy was toastmaster.

Society News.—Dr. Leon L. Goodnow, Aberdeen, addressed the Spokane County Medical Society, October 10, on "Indus-

trial Surgery."——The Whatcom County Medical Society was addressed, October 7, by Dr. Arthur L. Jacobson, Seattle, on Parkinson's disease, illustrated with moving pictures.——October 11 was Public Health League night with the Whitman County Medical Society. The speakers were Dr. Samuel E. Lambert, Spokane, president of the league, Dr. Harry E. Rhodehamel of the executive committee of the league, and Miss Helen Wilcox, the secretary.——The King County Medical Society was addressed, November 4, by Dr. Howard C. Naffziger, San Francisco, on "Diagnosis of Brain Tumors," and Dr. Cline F. Davidson, Seattle, on "Insulin as a Tonic."——The Snohomish County Medical Society was addressed recently by Drs. Albert B. Murphy, Everett, Clement L. Hoeffler and Harry R. Secoy on recent progress in bronchoscopy, sinus diseases and treatment of diseases of the eye, respectively.——Dr. John E. Nelson, Seattle, addressed the Chelan County Medical Society, Wenatchee, October 2, on treatment of chest conditions with special reference to thoracoplasty, and Dr. Roger Anderson, Seattle, on new methods in the treatment of fractures.

WISCONSIN

Society News.—The Canti cancer film was shown before the University of Wisconsin Medical Society, November 15; Dr. Phillips F. Greene, associate professor of surgery, gave a review of cancer statistics in Wisconsin; Dr. Charles H. Bunting, professor of pathology, spoke on medical and public knowledge regarding malignant growths.

Personal.—A portrait of the late Dr. Arthur S. Loevenhart, formerly head of the department of pharmacology of the University of Wisconsin Medical School, has been hung in the auditorium of the Memorial Institute of the Wisconsin General Hospital, Madison.——Dr. Charlotte J. Calvert, Madison, succeeds Dr. Cora H. S. Allen as acting director of the bureau of child welfare of the state board of health.

Health Center Given to Milwaukee.—The trustees of the Matthew Keenan estate have given to the city of Milwaukee a site and $150,000 for a health center building, which will be erected at Thirty-Sixth Street and Auer Avenue to care for the health needs of the northwest part of the city. It will house clinics and health education activities, in addition to various divisions of the central health department. The late Matthew Keenan, who was engaged in business in Milwaukee, held many positions of trust in the community; he was a regent of the University of Wisconsin and trustee of the city library. Milwaukee has two district health centers. The southside center will be housed in the new Johnston Emergency Hospital which is being constructed at Grant Street and Windlake and Eighth avenues.

GENERAL

Rare Manuscript Presented to Congressional Library.—A rare fourteenth century manuscript of the Chirurgia Magna, the medical work of Bruno of Longoburgo, Italy, has been presented to the library of Congress by Judge Nippert of Cincinnati. It comes to the library through the interest of Dr. Otto H. F. Vollbehr of Berlin, who has made a number of notable gifts to the library of Congress. Bruno, the author, while practicing in Padua in 1252 finished the Chirurgia Magna, which is a compilation made at the request of his friend, Andrew of Vincenza. Bruno, like others of his time, experimented with anesthetics; he was among the first to speak of wounds as healing by first or second intention, and was one of the first to mention a third form of bleeding, the capillary.

Largest Number of Automobile Deaths Yet Reported.—In the four weeks ending November 2, in seventy-eight large cities of the United States, 840 deaths from automobile accidents were reported to the U. S. Department of Commerce. This is the largest number reported for a similar period since the department began collecting this data, the largest previous number for a four week period having been 771. The total of 840 is more than one third greater than the previous record. For the fifty-two week period ending November 2, the total automobile deaths were 8,424, in comparison with 7,250 in the same period ending Nov. 3, 1928, giving rates of 25.6 per hundred thousand of population and of 22.1, respectively, or an increase of 16 per cent in the rate in a single year.

Casualties in Metal Mining Industry Reduced.—The U. S. Bureau of Mines reports a reduction of 19 per cent in the death rate in the metal mining industry during 1928 and a reduction of 7 per cent in the rate for injuries. There were 273 miners killed and 22,483 injured in the metal and nonmetallic mineral mines of the country during 1928 in a total of 113,866 men employed. The highest fatality rate (3.03 per thousand 300-day workers) was in the copper mining industry. Of the total number of workers, 70,188 were employed underground, and among these 227 were killed, while among 29,378 employed on the surface, thirty-one met death, and of 14,300 employed in open pits fifteen were fatally injured. The greatest single cause of death to underground workers was falling rock or ore from roof or wall. Shaft accidents caused forty-one deaths. The greatest number of workers employed in the metal mining industry of any state was 15,329 in the copper and iron mines of Michigan.

Malaria Seems to Be Increasing.—Studies made by the U. S. Public Health Service indicate that malaria in the last two years has increased in amount and in severity in the southern states. While the malaria rate has been steadily falling for years, the reduction was not great in 1925, was not at all apparent in 1926, and in the two following years there was an upward trend. In some states, the death rates are said to have risen sharply. A few circumscribed epidemics have occurred; severe forms of malaria have suddenly appeared here and there, and several deaths from acute malaria have been reported. Most of the malaria control work has been done in cities, but malaria has always been heaviest in rural districts. Among the methods used in control work now is the distribution of paris green in the form of a dust as a larvicide. An outfit for dusting can be carried along with an outboard motor in a light motor car and can be set up by one man in a light row boat. The dust gun creates a cloud of paris green and hydrated lime which drifts in the wind and has been known to kill larvae at a distance of more than 600 feet. One person using this outfit and a few laborers with hand power knapsack dust guns can prevent the production of mosquitoes from all or nearly all of the producing areas in a county at cost within the reach of most communities.

Society News.—Dr. Roy W. Fouts, Omaha, was made president elect of the American College of Physical Therapy at the annual meeting in Chicago, November 6. The president now is Dr. Norman E. Titus, New York, and the secretary, Dr. Frederick L. Wahrer, Marshalltown, Iowa.——At the annual meeting of the Associated Anesthetists of the United States and Canada, October 14-18, Chicago, Dr. Ansel M. Caine, New Orleans, was made president; Dr. Mary E. Botsford, San Francisco, president elect and Dr. F. Hoeffer McMechan, Avon Lake, Ohio, reelected secretary. The next annual session will be held at Winnipeg, Man., Canada, August 28-31, 1930.——Dr. William H. Wilmer, Baltimore, was made president and Col. Jefferson R. Kean, U. S. Army, retired, Washington, D. C., was reelected secretary of the Association of Military Surgeons of the United States at the annual meeting, September 26-28, at Denver.——At the thirty-third annual meeting of the United States Live Stock Sanitary Association, Hotel LaSalle, Chicago, December 4-6, Dr. Morris Fishbein, editor of THE JOURNAL, will give the opening address; Dr. Herman E. Hasseltine, U. S. Public Health Service, Washington, D. C., will speak on "Relationship of Human and Animal Brucellosis," and William H. Feldman, D.V.M., Mayo Clinic, Rochester, Minn., on "Pathogenicity of Avian Tubercle Bacilli for Dogs."——Dr. John F. Barnhill, Indianapolis, was made president elect of the American Academy of Ophthalmology and Otolaryngology at the recent annual meeting at Atlantic City.

Medical Bills in Congress.—H. R. 4897, introduced by Representative Glover, Arkansas, proposes to amend the World War Veterans' Act to provide that an ex-service man developing chronic bronchitis within one year after separation from service shall be conclusively presumed to have acquired it, or to have suffered an aggravation of a preexisting bronchial disease, in service between April 6, 1917, and July 2, 1921. H. R. 5053, introduced by Representative Cable, Ohio, proposes to amend the World War Veterans' Act by extending from Jan. 1, 1925, to Jan. 1, 1930, the period within which, if an active tuberculous disease develops a 10 per cent degree of disability, it shall be conclusively presumed to have been acquired in service. H. R. 5058, introduced by Representative Crail, California, proposes to amend the World War Veterans' Act to authorize the director to furnish medical, surgical and hospital service, including medicines, serums and surgical supplies, to every honorably discharged veteran of the Spanish-American War, the Philippine insurrection, the Boxer rebellion, and any Indian war or insurrection. H. R. 5189, introduced by Representative Evans, California, proposes to amend the World War Veterans' Act to provide compensation for deaths of veterans not resulting from disability or injury suffered, or disease contracted, in the military or naval service between April 6, 1918, and July 2, 1921, provided such veterans have been rated totally and permanently disabled as a result of military or naval service. H. R. 5181, introduced by Representative Johnson, Washington, proposes to provide for the proper care and treatment of certain citizens of Alaska who within one year after leaving

the Territory are adjudged insane by a court of competent jurisdiction in the United States. S. 2075, introduced by Senator Sheppard, Texas, proposes to amend the Narcotic Drugs Import and Export Act by bringing within its purview cannabis indica and cannabis sativa.

Health Work of League of Nations.—In a report of a committee to the assembly of the League of Nations in Geneva in September, the methods of the health organization were outlined. The health committee of the league in 1924 inquired into the problem of the diagnosis of syphilis by blood tests, requesting a group of experts to evaluate the various tests properly. They met in Copenhagen to study by means of research the methods of diagnosis, and met again last year to reach conclusions. Following this work, the health committee of the league undertook to compare the value of the group of remedies known under the name of "salvarsan and its derivatives." The committee has secured an agreement as to the method of use of these remedies and as to a standard preparation which is kept in official institutions in Frankfort, London and Washington, for the purpose of ascertaining whether the safety and efficacy of preparations manufactured equal those of the international standard. The committee expects to be able soon to report on the results of the treatment of syphilis, as studied in university clinics and dispensaries in a number of countries. The health organization of the league has followed the same method in its inquiry into infant mortality. Its conclusions based on studies in numerous districts form the basis, it is said, of fresh efforts to reduce infant mortality. The same method has been applied by the malaria commission of the league. It has conducted inquiries in Europe, North America and Asia Minor, and has formulated principles for directing antimalaria measures. Delegates of the malaria commission recently arrived at Bombay at the invitation of the government of India to study the results of antimalaria measures adopted there. The health ministry of China has invited the medical director of the League of Nations to become a member of the international committee of advisers in reorganizing the health service of China. The leprosy commission of the league is organizing an investigation in Latin America, and then will do so for the Far East. It has been invited by Japan to hold its meetings next spring in Tokyo. The committee has completed its work of inquiry into the health conditions of New Guinea, New Caledonia, the New Hebrides, the Solomon Islands and Fiji. Its recommendations for preserving the races on these islands will be published shortly.

CANADA

Lectureship in Diseases of Children.—In appreciation of his long service as editor of the *Canadian Medical Association Journal* and in recognition of his eighty-second birthday, the Canadian Medical Association will establish a lectureship in diseases of children in honor of Dr. Alexander D. Blackader and will collect $5,000 for its endowment. The income from this sum will be applied once in three years to provide an honorarium for the pediatrician chosen to deliver the lecture.

Association Graduate Work.—In the three years that the Canadian Medical Association has carried on an extensive postgraduate program with the financial assistance of the Sun Life Insurance Company, 767 speakers have been provided to give addresses throughout Canada, especially in the sparsely settled places. They gave 2,044 addresses before 62,370 people at a total cost of $92,292.68. This work is being continued by the association for the fourth year, and for the fourth time the Sun Life Insurance Company has made an annual grant of $30,000 for this work.

Protecting Practitioners.—The Academy of Medicine of Toronto, through the committee on public health relations, has been endeavoring to aid the home and school and child welfare councils in their claims for better care of the preschool child. In doing this, the committee has tried to protect the rights of the general practitioner. It has been found, the *Canadian Public Health Journal* says, that "these enthusiastic and useful organizations, in their endeavor to do good to one section of the community, were somewhat inclined to overlook the just claims of another and important section of the community, namely, the family physician." The committee which undertook to provide speakers and addresses for the use of the child welfare council in its propaganda urges physicians to cooperate with these organizations.

Society News.—In addition to the scientific program at the annual meeting of the British Columbia Medical Association, Vancouver, September 25-26, there was an address by Dr. Alfred T. Bazin, president of the Canadian Medical Association, on "The Pitfalls of Practice"; by Dr. George Harvey Agnew of the department of hospital service of the Canadian Medical Association, who spoke at the luncheon, Tuesday, and by Dr. Thomas C. Routley, general secretary of the Canadian Medical Association, at the annual dinner, on "More Medical Organization."——The Vancouver Medical Association will be addressed, December 3, by Drs. Joseph P. Bilodeau on "Practical Views on Late Toxemias of Pregnancy," and by Dr. Wilfrid L. Graham on "Postoperative Intestinal Obstruction." The annual dinner of the society will be held November 23, and the annual Osler Lecture, March 4, by Dr. John J. Mason. Dr. Lyon H. Appleby will speak, April 1, on "Surgery of the Sympathetic Nervous System."

FOREIGN

Society News.—The Osler Club, 27 Wimpole Street, London, was addressed, November 1, by Dr. Karl Sudhoff of the University of Leipzig on "Richard the Englishman," and on September 27, by Dr. A. P. Cawadias on "Evolution of Therapeutics in Internal Medicine."

The Lancet Moves to New Home.—From 1823 to 1847 the editorial headquarters of the *Lancet* were in Norfolk Street, London, where Thomas Wakley, the founder, was engaged in the practice of medicine. In 1847 he acquired the lease on the building on the corner of Bedford Street where, until 1921, the printing office was located. Now the *Lancet* has moved its editorial and printing offices into a reconstructed building at 7 Adam Street, which the proprietors have purchased. The editor and Lady Sprigge held an informal housewarming party, October 16, receiving friends in the editorial rooms on the first floor.

Annual Dinner of British Medical Association.—The eighth annual dinner of the council of the British Medical Association was held in the Great Hall at headquarters in Tavistock Square in October. The first public inspection of the recent additions to the headquarters and the reconstructed library and council chamber was made at this time. Among the 250 guests were the minister of health, several members of parliament, the chairman of the London County Council and other public officers, the presidents of medical institutions and the heads of the professional organizations representing the bar, architecture and accountancy. Various toasts were proposed, Dr. Ernest H. Snell proposing the usual toast of "The Common Health" to which the minister, Mr. Arthur Greenwood, responded. Mr. Greenwood, the *British Medical Journal* says, described himself as the only layman in the company but emphasized the happiness of the relations between his department and the medical profession. A ministry run without regard to the profession, he said, would be a ministry deprived of its most useful contact with experience. Lord Riddell amused the company with a new batch of anecdotes.

Government Services

Foreign Duty for Public Health Officers

The U. S. Public Health Service has issued orders relieving Surg. Mark V. Ziegler from duty at Prague, Czechoslovakia, and assigning him to Ellis Island, N. Y. Passed Asst. Surg. Alfred J. Aselmeyer has been relieved from duty at Warsaw, Poland, and assigned to duty at Prague. Surg. Herbert M. Manning has been relieved from duty at Bergen, Norway, and assigned to Rotterdam, Holland. Asst. Surg. Joseph F. Van Ackeran has been relieved from duty at Dublin, Ireland, and assigned to Naples. Asst. Surg. Everett B. Archer has been relieved from duty at Göteborg, Sweden, and assigned to duty at Warsaw, Poland, and Asst. Surg. Langdon R. White relieved from duty at Oslo, Norway, and assigned to duty at Palermo, Italy.

Changes in Veterans' Bureau Personnel

The U. S. Veterans' Bureau *Medical Bulletin* reports the following recent changes in personnel of the bureau:

HOSPITALS

Dr. Charles R. F. Beall, transferred to Mount Alto.
Dr. Frank B. Brewer, transferred to Livermore, Calif.
Dr. Warren A. Colton, transferred to Minneapolis.
Dr. Paul R. Copeland, transferred to Lake City, Fla.
Dr. Charles F. Ensign, transferred to Edward Hines, Jr., Hospital, Hines, Ill.
Dr. Donald E. Faxon, appointed at Edward Hines, Jr., Hospital, Hines, Ill.
Dr. Delmar Goode, designated acting chief, N. P. service, Mount Alto, D. C.
Dr. Charles W. Hughes, transferred to Edward Hines, Jr., Hospital, Hines, Ill.
Dr. Walker D. Judkins, transferred to Outwood, Ky.

Dr. Marcellus McCreary, reinstated at Fort Bayard, New Mexico.
Dr. William C. Meloy, transferred to Whipple, Ariz.
Dr. Fred C. Smith, transferred to Boise, Idaho, regional office.
Dr. John R. Williams, reinstated at Palo Alto, Calif.
Dr. Henry W. Barrier, resigned at Edward Hines, Jr., Hospital, Hines, Ill.
Dr. Victor H. Bean, reinstated at Outwood, Ky.
Dr. Hallard P. Beard, appointed at Edward Hines, Jr., Hospital.
Dr. Fred Bearden, transferred to Alexandria, La.
Dr. Thomas R. Boggs, appointed at Washington, D. C.
Dr. Thomas S. Carrington, transferred to Lake City, Fla.
Dr. Jesse Ettelson, resigned at Portland, Ore.
Dr. Arthur E. Gill, resigned at Memphis, Tenn.
Dr. Percy P. Haslitt, transferred to Edward Hines, Jr., Hospital.
Dr. Walker D. Judkins, resigned at Outwood, Ky.
Dr. John H. Labadie, appointed at Portland, Ore.
Dr. Jefferson B. Latta, transferred to Alexandria, La.
Dr. Walter C. Nalty, appointed at Walla Walla, Wash.
Dr. Charles G. Rattner, resigned at Edward Hines, Jr., Hospital.
Dr. Arthur E. Rogers, transferred to Dwight, Ill.
Dr. Ivy G. Shirkey, transferred to Edward Hines, Jr., Hospital.
Dr. Arthur Camp Stanley, reappointed at Washington, D. C.
Dr. George F. Suker, resigned at Edward Hines, Jr., Hospital.

REGIONAL OFFICES

Dr. Thomas P. Jones, transferred to San Francisco.
Dr. Edward D. Le Compte, changed to fee basis status at Salt Lake City.
Dr. Edward L. Patterson, appointed at San Antonio, Texas.
Dr. Jacob L. Pritchard, appointed at San Jose, Calif.
Dr. Paul G. Sudhoff, resigned at Cincinnati diagnostic clinic.
Dr. Starling S. Wilcox, resigned at Columbus, Ohio.
Dr. John F. Allen, resigned at Omaha, Neb.
Dr. Thomas M. Barrett, appointed at Pittsburgh.
Dr. John N. Frederick, resigned at Pittsburgh.
Dr. Antony J. Greco, appointed at San Francisco.
Dr. Bruno A. Lungmus, resigned at Milwaukee.
Dr. Joseph H. McGuire, resigned at Dallas, Texas.
Dr. Tarleton F. Moore, transferred to St. Louis.
Dr. Walter J. O'Keefe, transferred to postoffice department.
Dr. Austin J. O'Leary, resigned at Seattle.
Dr. Egerton T. Wilson, resigned at Detroit.
Dr. Carl W. Woods, resigned at Washington, central office.

Change of Station in the Navy

The following changes of station of medical officers have been ordered by the navy department: Lieut. Comdr. Jack H. Harris from U. S. S. *Wright* to the navy receiving station, Raleigh, N. C.; Lieut. Samuel H. White to marine receiving station, Charlotte, N. C.; Lieut. David W. Lyon to naval dispensary, San Pedro, Calif.; Lieut. Comdr. James R. Thomas to naval hospital, Pearl Harbor, Hawaii; Lieut. Earl E. Dockery to Tulane University, New Orleans; Lieut. Comdr. Hutchens C. Bishop from U. S. S. *Cincinnati* to navy air station, Hampton Roads, Va.; Lieut. Leslie O. Stone to report to the navy hospital, Boston, for duty, his resignation of September 7 having been canceled; Lieut. Ross U. Whiteside from the U. S. S. *Concord* to the navy hospital, New York; Comdr. Frederick G. Abeken to navy recruiting station, Pittsburgh; Lieut. Comdr. Arthur E. Beddoe from navy hospital, New York, to U. S. S. *Concord*, about November 30; Lieut. Comdr. Claude E. Brown from navy yard, Portsmouth, N. H., to U. S. S. *Raleigh*, about November 15; Lieut. Comdr. Deane H. Vance from navy air station, Hampton Roads, Va., to U. S. S. *Cincinnati*, about November 30; Comdr. Paul R. Stalnaker to navy training station, Great Lakes, Ill.; Lieut. Comdr. John L. Frazer, Jr., from U. S. S. *Raleigh* to navy hospital, Pensacola, Fla.; Lieut. James G. Dickson to navy hospital, Great Lakes, Ill.; Lieut. Walter R. Johnson from destroyer squadrons, battle fleet, to the Pacific Coast Torpedo Station, Keyport, Wash.; Capt. Dudley N. Carpenter to navy hospital, San Diego, Calif.; Capt. Charles G. Smith to navy training station, Newport, R. I.; Comdr. Andrew B. Davidson from U. S. S. *Mississippi* to navy dispensary at San Pedro, Calif.; Lieut. Walter L. Bach to duty with the National Guard, Nicaragua; Lieut. Comdr. Frederick L. McDaniel from U. S. S. *Saratoga* to navy recruiting station, Denver; Lieut. David E. Horrigan to marine receiving station, Boston; Comdr. Frederick L. Benton, relieved from active duty and ordered home; Lieut. Comdr. Walter J. Pennell to duty with the director general, Public Health Service of Haiti; Lieut. Camille J. Flotte to first brigade, U. S. Marines, Haiti, about November 20; Lieut. John H. Korb, ordered to continue duty involving flying on the U. S. S. *Lexington;* Lieut. Comdr. John R. Poppen to Asiatic Station; Lieut. Comdr. Hugo F. A. Baske to the National Guard, Nicaragua; Capt. Frank L. Pleadwell, relieved of active duty and ordered home; Lieut. Comdr. Stephen R. Mills to navy hospital, League Island, Philadelphia; Lieut. Comdr. Charles L. Beeching to naval station, New Orleans; Lieut. Comdr. John C. Adams to duty at navy air station, San Diego, Calif.; Lieut. Comdr. George D. Thompson to duty involving flying at navy air station, San Diego.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 26, 1929.

Greater Importance Given to the Radiologist in the Treatment of Cancer

An administrative change has been inaugurated at the Middlesex Hospital (the one general hospital in London that has for many years had a special wing for the treatment of cancer) which is one of the most striking advances in British radiology. Through the munificence of an anonymous donor the hospital has been guaranteed five beds for seven years, to be in charge of the hospital radiologist, in order that patients with cancer who wish to avoid surgical operation can have radiologic treatment, if such treatment is considered advisable. Hitherto patients with cancer at the hospital have been classed as surgical cases, being passed on to the radiologic department only at the discretion of the surgeon. The new arrangement by which they can go directly from their physician to the radiologic department is a recognition of the growing importance of radiologic treatment and marks a step forward in the part which radiologists are playing in the treatment of cancer. The cancer wing of the Middlesex Hospital is now known as the Middlesex Cancer Hospital. Dr. J. H. Douglas Webster, who is in charge of the radiologic department of the hospital and has for many years advocated a more extensive use of radiologic treatment for cancer, recently stated in the *Lancet* that the ideal method is for all new cases of malignant disease to be seen by the surgeon and the radiologist in consultation. This was done by the late Mr. T. R. Kellock. But as a rule the purely surgical view prevails and radiotherapy is considered merely an adjuvant to surgery—to be employed only when surgery has failed, as surgery was once regarded by medicine. Moreover, the reluctance of patients suffering from cancer to consult a physician is often due to the fear of operation. Therefore a wider recognition of the benefits of radiologic treatment in the earlier stages would be helpful in the national campaign against the disease.

Propaganda to Diminish the Increasing Toll of Road Accidents

The National Safety First Association has just published figures relating to the causes of fatal road accidents during July and August which show that out of 781 accidents, 736, or 94 per cent, involved motor vehicles. These resulted in 815 deaths, of which 376 occurred to pedestrians, more than half being under 15 years of age; 199 to motorcyclists and ninety-eight to bicyclists. Only 3 per cent of the drivers of the 942 motor vehicles involved were women. Under 1 per cent of all the accidents were classified by coroners as entirely unavoidable. The prime causes were as follows: motor drivers, 40.31 per cent; pedestrians and other road users, 47.17 per cent; vehicular defects, 2.68 per cent; road defects, 3.71 per cent; weather, 1.67 per cent; fire, 0.13 per cent; miscellaneous avoidable, 3.44 per cent; unavoidable, 0.89 per cent.

Reference is made by the association to the recent report of the London and Home Counties Traffic Advisory Committee on Street Accidents, which stated that funds should be provided to enable an intensive campaign to be conducted for the education and warning of all road users. The association points out that the governments of Australia and Canada make grants for the purpose, but the British government has refused. The problem, therefore, of raising sufficient funds for the preparation of propaganda and the establishment of branches in the principal centers, as recommended by the Road Safety Congress last year, is consequently a serious one.

The Cost of Social Services

In a pessimistic article the *Times* calls attention to the rising cost of social services. The major extensions of social services effected since the war have been financed by a fund to which the beneficiaries have made some contribution and are therefore founded on the principle of insurance. The insurance system now covers some 17 million people—the bulk of the working class population—in respect of unemployment, health, widows', orphans' and old age insurance. There has been constant addition to the taxpayers' burden in respect to unemployment insurance, because of the persistent and unprecedented unemployment. Though not long in office, the present labor government has added $17,500,000 a year to meet this need and $40,000,000 by extension of widows' pensions. Further, the labor party is teaching that the contributory system has little if any virtue and that the beneficiaries have a right to such services without paying for them. The cost of social services described as insurance for the year 1926-1927 was $675,000,000, toward which the beneficiaries contributed only $130,000,000, the difference being made up by employers ($145,000,000) and taxpayers ($400,000,000). Other social services not covered by insurance cost $1,235,000,000, to which the beneficiaries contribute nothing except what they find as ratepayers or taxpayers (among which they are much the lowest class of contributors). The total cost of all the social services therefore amounted to $1,915,000,000—six times as much as in 1910-1911. After allowance has been made for the self-supporting services of the postoffice and the road fund, this total is equal to 43 per cent of the total tax and rate borne expenditure. Moreover, increases must be expected in education, health, services and housing. As the labor chancellor of the exchequer says, increases in these are automatic. To the original duties of the state to provide for defense and the maintenance of order has been added nothing less than the large scale redistribution of wealth. When and if the labor party realizes its ambition to "increase the purchasing power of the masses," this function will become even more prominent. A labor minister of the previous government proposes to institute a general subsidy to wages, but even short of this the policy of "maintenance" (of those out of work), which is one of the labor demands, is estimated to cost $1,145,000,000. Of course the fallacy of the whole scheme is that the taxpayer has not a boundless capacity for paying and that taxation beyond a certain point will dry up the sources and produce unemployment, of which this country now furnishes an object lesson which the labor party is most unwilling to learn.

The Purification of the Water of Swimming Baths

The ministry of health has issued a report which states that the filling of swimming baths with water already polluted has so far rarely given trouble. Of chief importance is contamination from the persons of the bathers. But there has been contamination from surface drainage, percolation, fallen leaves, dead animals, natural growths and water birds. This has been mainly in open baths, particularly those with unlined sides and bottoms. The green growths often complained of on account of appearance are beneficial by their oxygenating action, which purifies the water. A large proportion of the filth found in the water is carried in by the boots of the bathers and spectators. The side paths of the baths are almost always covered by dirt suspended in water and although drainage away from the baths is provided, much pollution reaches the water on the bathers' feet. The only way to avoid this is to have the entrance to the dressing rooms from the outside separate from those by which the bathers enter the water. Much pollution is derived from the bathers' costumes, which should be well washed and disinfected.

But the most serious pollution comes from the bathers themselves. This is of three kinds—particulate matter, material in solution and bacterial pollution, which may be considerable. The effect is gradually to convert the water into a culture medium, in which multiplication rapidly takes place, as the temperature is usually about 72 F. This pollution could be considerably reduced by the bather taking a preliminary shower bath with soap. Various diseases appear to be occasionally transmitted by the water in swimming baths. Gastro-intestinal infections are seldom transmitted; the only recorded epidemics were due to water grossly polluted by sewage. Respiratory infections, such as pneumonia, are occasionally described, but prolonged immersion, overfatigue and subsequent chilling seem to be the factors. The skin infections occasionally associated with swimming baths, such as furunculosis, scabies, ringworm and pediculosis, are probably usually transmitted by towels, costumes and seats. But furunculosis of the external ear seems generally to be an auto-infection following irritation due to bath water retained by cerumen and skin casts in the meatus. Conjunctivitis is the most common eye infection transmitted in swimming baths, and sometimes occurs in epidemic form. But it seems to be more commonly spread by towels than by water. There are numerous recorded cases of middle ear disease obviously due to swimming.

Cancer Research

The British Empire Cancer Campaign has made a grant to the Cancer Hospital for the special scheme of radiologic research which is being carried out on the effects of x-rays on the blood constituents of the bone marrow. This work is part of a comprehensive scheme approved by the campaign three years ago and is carried on jointly by research workers and clinical workers with the object of correlating the results of experimental work with those observed in the treatment of cancer. A grant has also been made for the continuation of research work on the relation of the effect of the chemical nature of mediums on culture growth.

The "Hardening" of Pharaoh's Heart

Lecturing at Leeds on "Surgery Ancient and Modern," Lord Moynihan showed some remarkable photographic sections made from the heart of the Pharaoh of the Oppression. The heart of this monarch was found by the late Mr. S. G. Shattock, pathologic curator of the Royal College of Surgeons, to have been so well preserved that he was able to make sections from the aorta and compare them with those of a man recently dead. They were so similar that no pathologist could tell which was the ancient and which was the modern one. Both were atheromatous. Mental changes accompanied that rigid arterial system. There was narrowness and rigidity of outlook, loss of enthusiasm, dread of new adventure and restriction of enterprise. There was clear proof that these mental defects were shown by Menephtah, for the Book of Exodus said, "And the Lord hardened the heart of Pharaoh, and he hearkened not unto them." It was interesting to have an ocular demonstration of the truth of the Old Testament.

In a letter to the *Times*, Prof. Elliot Smith tells for the first time the story of this most interesting visceral discovery. The wrappings were removed from the mummy of the Pharaoh Menephtah on July 8, 1907. The mummy had been found in the tomb of Amenophis II in the Valley of the Tombs of the Kings at Thebes and its identity was proved by the hieratic writing on the shroud. Several years before some excitement was aroused by the discovery at Thebes of a stele of Menephtah's reign, which was supposed to contain a reference to Israel. While Professor Smith was unrolling the mummy, M. Gaston Maspero, director-general of the Antiquities Services of Egypt, was telling missionaries who had been invited to be present of a tradition of the Alexandrian epoch that Menephtah was the Pharaoh of the Exodus who perished in the Red Sea. Hence when the mummy was exposed and Professor Smith called attention to the unique phenomenon of the

incrustation of the body with crystals of common salt, M. Maspero turned to the missionaries and said: "There you see the confirmation of the Red Sea episode." Then when Professor Smith found calcified patches on the aorta, M. Maspero at once added, "and his heart was hardened." One of the broken pieces of damaged aorta was sent to the Royal College of Surgeons and examined by Professor Shattock, as already stated.

Great Decrease in Drunkenness

The official figures for 1928, just issued, show a great decrease in the number of convictions for drunkenness as compared with the previous year. The total was 55,642, a level which had previously been lower only in two years of the war, 1917-1918, when millions were serving with the forces abroad and the supplies of intoxicants at home were drastically curtailed. In the prewar year of 1913, the number was 188,877. In the war period 1914-1918 there was a sharp decline, until in the last year the figure had fallen to 29,075. In 1919, under more normal conditions, the figure rose to 76,988; in 1924 it was 79,082. Since then there has been a yearly decrease, that for 1928 being 14.6 per cent. This decline of drunkenness must be largely attributed to industrial depression and the very high cost of intoxicants since the war.

The Problem of Maternity Welfare

The minister of health, Mr. Arthur Greenwood, addressing the fourth annual Conference on Maternal Mortality, paid a tribute to the committee in bringing to the forefront of public discussion the problem of maternal mortality. In spite of progress the nation was still faced with this stubborn problem, which was not so much the loss of life, amounting to 3,000 a year, sad as it was, but the number of lingering lives that came to an end after no real enjoyment of life. He attached great importance to the report of the committee appointed by the government to consider the problem of maternal mortality and also to the committee which had been considering the training and employment of midwives. He also drew attention to the memorandum of the British Medical Association outlining a national service (THE JOURNAL, September 21, p. 929). Further legislation would be required, but local authorities were not all using the power which they possessed. The expectant mother ought to be able to feel that she has the organized resources and the full sympathy of the community behind her. That sympathy could be exercised through antenatal clinics; the employment of proper midwives; the making available of the services of a physician with a specialist in the background, ready to step in if necessary; the provision of a maternity hospital when the domestic surroundings were not suitable, and the provision of domestic help during the period of confinement.

Death from Using a Rat Poison

An inquest was held at Alton, Hampshire, on a farm manager, aged 53, who died from inhaling a rat poison which came back in his face as he was blowing it down a rat hole with a bellows. He was found unconscious on the floor of a small shed, the windows of which were closed. He died in a hospital five days later. The necropsy showed congestion of the brain which was attributed to cyanide poisoning. The medical evidence was to the effect that the poison was too powerful to be used by people not in the habit of dealing with chemicals. The technical advisers to the manufacturers of "Cyanogas," the preparation used, said that it was decidedly dangerous to blow it with a bellows and that even if the right apparatus was used it would be dangerous to use the powder in a shed not sufficiently ventilated. There were strict instructions on the tin with regard to ventilation. The coroner, however, said that he thought that the instructions on the tin were very carelessly drawn.

PARIS

(From Our Regular Correspondent)

Oct. 16, 1929.

The Use of Ultraviolet Rays by Other than Medical Men

Some time ago the Tribunal de la Seine reached a decision to the effect that the use of ultraviolet rays for the treatment of patients is a medical act which should be reserved by law to the holders of a doctor's diploma in medicine. This decision was reached in a damage suit brought by the Syndicat médical of Paris against a masseur who used ultraviolet rays in treating his clientele. Professor Balthazard, medicolegal expert, declared that the manipulation of ultraviolet rays might evoke complications in a patient, when employed empirically, and in the absence of control based on medical knowledge—a degree of knowledge such as an ordinary masseur cannot claim to possess. The masseur under trial was a Swiss subject who had been, before the war, masseur to the ex-kaiser William II, who had conferred on him, of his own accord and as an expression of his gratitude, the diploma of doctor honoris causa of the University of Berlin. The judges of the Tribunal de la Seine took no account of the honorary degree, and, in view of the fact that the man, who had specialized in ultraviolet rays, gave treatments to patients without medical control, assessed against him a fine of 200 francs and damages to the amount of 500 francs payable to the Syndicat médical.

The Thirty-Eighth French Congress of Surgery

The Association française de chirurgie held its thirty-eighth annual session (the French Congress of Surgery) from October 7 to 12, in the Great Hall of the Faculté de médecine, under the chairmanship of Professor Tixier of Lyons, who was assisted by Marshal Lyautey, honorary president of the opening meeting. The session was a brilliant success. A great number of foreign surgeons had come long distances in order to participate, among whom may be mentioned particularly Drs. Albee and Soresi of New York; Waldenstrom of Stockholm; Paul Guildal, Hansen and Christiansen of Copenhagen; Jiano and Léonté of Bucharest; Jacobovici of Cluj; Phocas, Contargyris and Alivisatos of Athens; Alessandri of Rome; Gino Pieri of Belluno; Leonardi Dominici of Sassari; Reynaldo dos Santos of Lisbon; Dziembowski of Bromberg (Poland); Steinmann and De Quervain of Bern; Kummer and Jentzen of Geneva; Picot and Roux of Lausanne; Henschen of Basel; Delchef, Mayer and Maffei of Brussels; Lauwers of Courtrai; Sebrechts of Bruges. Dr. Albee was given an ovation when he rose to speak. He was the only person to whom was accorded the special permission to use a language other than French. Professor Tixier delivered the opening address at the first session, in which he described the stages through which a surgeon must pass in his successive professional development. He expressed the desire that in his training the surgeon might acquire a greater knowledge of things purely medical, since surgery is coming to play an ever increasing part in the treatment of diseases heretofore reserved to physicians. Marshal Lyautey, the illustrious pacifier of Morocco, on being asked to address the meeting, excused himself in a playful manner for being found in such learned company, and stated further that he certainly would not be present if it had not been for the skill of the surgeons in getting him back into shape following the ten or a dozen occasions on which he had been wounded. He praised the work of the physicians in Morocco, referring to them as the best instruments of the pacific conquest. A good physician sent among the natives, he said, accomplishes more than a regiment of soldiers. Marvelous recoveries and successful surgical operations do more than cannon in inducing a tribe to accept our friendship.

The discussion of the three questions on the program was then begun. It was remarked that the surgeons of the provinces participated with more enthusiasm than the surgeons of Paris.

The latter did not attend frequently the sessions of the congress, as they have, during the year, the advantages of the Academy of Medicine and the Société de chirurgie if they have communications to present. It is quite possible, too, that, out of courtesy, they left the honors of this Paris meeting to their colleagues from the provinces. They participated, however, in the operative sessions at their hospital services, where, every morning, they gave evidence, before their visitors, of their masterly skill.

THE INDICATIONS AND THE RESULTS OF SURGICAL TREATMENT IN PULMONARY TUBERCULOSIS

The introductory paper was entrusted to Professor Bérard of Lyons, aided by Dr. Dumarest of the Hauteville Sanatorium and by Dr. G. Lardennois, surgeon to the hôpitaux de Paris. It was a complete presentation of this live topic, including comprehensive statistics. The authors did not take up the subject of pneumothorax, as they regarded pneumothorax as belonging to the medical domain. They considered more particularly the various forms of thoracoplasty, apicolysis, pleuroparietal detachment, and phrenicectomy. They estimate that about 5 per cent of the cases of pulmonary tuberculosis are amenable to surgical treatment. Sometimes the exclusion of a lung is indicated, if a removal of the lesions is adjudged impossible; in other cases there are pleural complications, pleurisy complicating the pneumothorax and compromising the results. In the former cases, collapse therapy is to be considered, and they have as an essential condition the possibility, with regard to the pulmonary tissue, of a total retraction. Thoracoplasty is a serious operation, but the risks are much lessened when it is performed in several stages and at the sanatorium. It is indicated chiefly in tuberculous cases of long standing and during an inactive period, pneumothorax being reserved for tuberculosis in the active stages. It has, even more than pneumothorax, as a formal indication, confinement of the lesions to one side. Phrenicectomy produces only a partial collapse; but, being easier to accomplish and more benign, it may be employed as the first stage of thoracoplasty. It is to be recommended in the grave ulcerous types (which are stabilized and evolving slowly), particularly if pneumothorax has failed and thoracoplasty is inapplicable. Lesions of the base of the lung, contrary to current opinion, have no better chance of being improved by phrenicectomy than lesions of the apex. Immobilization of the lung appears to be of greater importance than its more or less complete retraction and the degree of elevation of the hemidiaphragm.

Considering the results, M. Bérard presented statistics on ninety-eight cases that came to operation before Jan. 1, 1929, thirty-nine having been total thoracectomy in one stage, twenty-five thoracectomy in several stages, and thirty-four partial thoracectomy. In 22.3 per cent of the cases the results were very good; in 18.3 per cent, good; in 7.1 per cent, some improvement; in 2 per cent, the results were negative; in 14.2 per cent, postoperative death was recorded; in 25.3 per cent, death occurred secondarily or remotely, and in 6.1 per cent the results were unknown, the patients not having been seen again: thus, a total of 47.9 per cent of positive results. Bull's statistics reach 53 per cent and Sauerbruch's 59 per cent. As to phrenicectomy, M. Bérard found only 120 conclusive cases out of 300 operations performed before 1928. The positive results (very good, good, improvement) are represented by 41 per cent. The successful results are greater in the localized, grave but active types and mainly on the right side; they are rare in the acute cases. As a whole, phrenicectomy may accomplish remarkable results, but it is always difficult to foresee in a given case what the result will be. Bérard called attention to the rôle of pachypleuritis, which may render more difficult and illusory the work of the surgeon. The operative indications are, above all, the unilaterality of the lesions, the absence of other grave localizations of tuberculosis (laryngeal, intestinal, renal) and the relative integrity of the functions of the vital organs (heart, liver, kidneys). Numerous communications on the same subject were presented by various members of the congress. Picot of Lausanne spoke in favor of the technic of his compatriot Roux, as it takes better care of the later functioning of the thoracic muscles. In a series of thirty-nine operations, Picot recorded twenty-eight survivals after from three months to ten years, eight operative deaths, and three deaths from late complications. Roux took a stand for thoracoplasty in one stage, recommended anesthesia with nitrous oxide combined with oxygen, and demonstrated the use of the special forceps of his own invention. Jacobovici of Cluj reported his six thoracoplastic operations with five recoveries and one death; his forty phrenicectomies with seventeen good and five bad results. Léonté of Bucharest spoke in favor of phrenicectomy. Sebrechts of Bruges advocated ether anesthesia, and described his personal method of apicolysis, with about 40 per cent of recoveries. Lauwers of Courtrai, Henschen of Basel, Maurer of Paris, Santy of Lyons, Jeanneney of Bordeaux, Piollet of Clermond-Ferrand, and Divis of Prague presented their statistics.

OSTEOSYNTHESIS IN POTT'S DISEASE

The paper on osteosynthesis in Pott's disease was especially noteworthy, having been prepared after a referendum addressed to the principal surgeon specialists of all countries, through the collaboration of MM. Etienne Sorrel of Paris and Rocher of Bordeaux. The paper does not lead to definitive conclusions and confirms the infinite variety of the results secured with the various operative technics, which they describe minutely: osteosynthesis without graft of the Hibbs type, osteosynthesis due to foreign bodies or to a heterogenous bone graft, osteosynthesis by means of autograft (Albee). The diversity of the results is almost as great as the diversity of the cases, depending on whether it is a case of Pott's disease in a child, Pott's disease in an adult, and whether active or dormant types with tendencies to sclerosis or to generalization of the tuberculous process in the organism. It is not fully established just how the graft behaves in osteosynthesis—whether it is only a temporary mechanical factor in aid of immobilization, permitting the bone lesions to evolve silently and to become suppressed, or whether it constitutes a local calcic contribution modifying the evolution of the lesions. In other words, it is not definitely established whether osteosynthesis is a palliative or a curative operation, though the latter rôle is somewhat doubtful. In any event, it does not dispense with the older forms of treatment—namely, prolonged immobilization, compression of the gibbus, and the wearing of an orthopedic corset. It enables one to shorten this period; but it would be an exaggeration to say that it is sufficient in itself to effect a cure of Pott's disease within a few months and that it prevents generalizations of tuberculosis in other organs. All ankylosing operations have, however, the advantage that they immobilize the vertebral focus. They are of no value in children, for whom the ordinary orthopedic methods suffice. They are adapted more especially for cases of Pott's disease in adults that is developing slowly, and when they are instituted it is usually past the critical period —after the third, fourth or fifth year. Dr. Calot has renounced the method that he introduced. Having kept his first patients operated on, in a plaster cast, then in a celluloid cast, to consolidate the bony structure, he discovered that this traditional method, supplemented by gradual compression of the gibbus by means of layers of cotton introduced through a dorsal fenestra made in the cast, gave the same results without resort to osteosynthesis being necessary. Furthermore, the mortality is only half as great. Recently, Kidner and Filupo published an article that fully confirms Dr. Calot's view. Treating a series of cases of Pott's disease, they divided them into two groups, to one of which osteosynthesis was applied, while the other received only a plaster cast worn for a sufficient length of time. In the first group the treatment extended over a longer period and

the results were not so good as in the group treated without operation. Drs. Albee of New York, Waldenstrom of Stockholm, Guildal of Copenhagen, Maffei of Brussels, Jiano of Bucharest, Froelich of Nancy, Vignard, Patel and Santy of Lyons, Imbert, Rottenstein and Silhol of Marseilles, and others, presented communications on the same subject, the conclusions of which were somewhat contradictory.

(To be continued)

MADRID

(From Our Regular Correspondent)

Oct. 24, 1929.

Dr. Asuero, the Magician of San Sebastián

The Spaniard is prone to believe everything that seems magical and to look on the supernatural as a refuge from the tedious course of life. During the last few months, the public has been swayed by what has appeared to be the magic of a physician because of the extraordinary effects of his method of treatment. The method is simply an excitation or tickling with a stilet of the mucous membrane of the inferior turbinal bones. This method of treatment, which is a result of the studies of Bonnier, was brought to Spain at a psychologically opportune time, and those who have not personally seen the agitation which Dr. Asuero has caused in San Sebastián cannot imagine it. It has been his practice to stimulate the nasal mucosa of his patients, basing his act on an intensive suggestive action, which he enforced by means of his voice. He has ordered his patients to feel that they were cured and they have left his clinic stating that they were cured.

This state of affairs would probably have continued indefinitely had it not been stopped by the political organization of the country which previously censored the press. The press can publish only those articles on public health which are not contrary to the dispositions authorized by the government. This compels the newspapers to publish articles on topics which will be of interest to the public, and one of these topics has been the apparent cures of the magician of San Sebastián. Some physicians of Madrid and others throughout Spain, who have journalist friends, and who wanted publicity, have had articles published about their interviews with Dr. Asuero. These articles expressed both favorable and unfavorable opinions about him but nevertheless gave him a certain popularity, which increased his clientele. Prime ministers of several countries and ex-presidents of a few republics have visited him. He came to Madrid to be introduced to the queen and to the president of the supreme council. A memorial plate has been placed in San Sebastián in his honor and near the end of July a parade was held there in honor of his birthday in which more than 60,000 persons took part. On this day the other physicians of San Sebastián could not leave their homes for fear of being injured by those taking part in the parade. Because they are opposed to the methods of Asuero, the paraders shouted: "Down with the physicians of San Sebastián! Down with the murderers of our parents!"

Dr. Asuero promised to take part in a meeting during the medical week which was held in San Sebastián in September, and to explain the fundamental basis of his method of therapy and present his clinical observations, but instead of that he increased the price of his treatments. He has taken in $10,000 in one day several times. He has aroused so much scientific agitation with Bonnier's method that more than a dozen books have recently been published on the subject. Three of the authors are connected with the Real Academia Nacional de Medicina and one is a professor in the Faculty of Medicine of Madrid. A leading medical journal has published several numbers devoted almost exclusively to Bonnier's method of intranasal therapeutics and to the reflexes which may be produced in the organism. The articles do not defend the conduct of a physician who forgets his duties to his profession, but, to a layman, they appear as if they were written in his honor. They were written by the ex-president of the Real Academia Nacional de Medicina, with the intention of giving credit to Bonnier, and not to extol the exploitation of the method by Asuero. The public meanwhile has been given an unfavorable impression of the medical profession in general. The profession has not been in unison and the public has observed the rage with which some of its principal personages have attacked one another.

Asuero asserted that he would close all anesthetic factories and pharmacies, but it now seems that he has had his day. No one speaks of him any more and he has announced that he is going to establish himself in Madrid, Buenos Aires or Santander.

Some positive knowledge has been gained from the turmoil. It is evident that stimulation of the mucous membrane of the inferior turbinals produces unusual effects in some cases. The effects most frequently observed are the relief of pain and the creation of psychic influences which may be beneficial to some. The action on the sympathetic system is not fully known; it may affect distant vessels and nerves.

Another result of so much public discussion of the matter was that the chronically ill patients who were attracted by Asuero neglected the balneotherapeutic establishments, which had a serious effect on the national centers of hydrology. Fewer patients have been treated in the hydrologic centers of Spain in the past summer than ever before. In some places the absence of bathers has resulted in financial catastrophe. The chief reason for this was that the patients all believed that they could recover their health by taking the nasal stimulation treatments. The medical profession has learned, as a result of this affair, not to treat medical subjects in political periodicals, as they are read by a public which is not informed on such matters, and which acts on first impressions and judges without knowledge. In the future medical subjects of such a nature should be considered only in medical periodicals.

Medical Examinations for Football Players

Dr. Oller, director of the institute of physical reeducation of Madrid, has been appointed president of the regional football federation in the central provinces of Spain. He has expressed his intention of having careful physical examinations made of all men who play football, because he believes that many of them have disorders which should prevent them from playing. He believes that some acquire serious diseases or die as a result of the sport. He has taken on himself the responsibility of deciding whether or not players are medically able to play. There is much enthusiasm for the game and the sport is very popular. Even children prefer football to other sports. The creation of a new club, with representatives in all cities and in public and private institutions, is reported frequently. The players often play strenuously without taking proper care of themselves, but some professional players have surprising resistance.

People believes that football is dangerous chiefly because of the danger of injury, but that is a mistake. Serious injury is rare, and slight injury is infrequent in proportion to the great number of tournaments that are held. Dr. Oller remembers only one death from injury, and that was when the player went on the field in an inadmissible condition. He had a large irreducible hernia. If he had been examined medically his death would probably have been avoided. He has seen fractures of the leg, clavicle and forearm in only a small percentage of players and all of them have recovered. Knee injuries have been more frequent than other joint injuries, but never to such an extent as to be serious.

The chief sources of danger lie in the heart and lungs. Many football players have died from tuberculosis. Some players with latent lesions have had serious attacks after violent exercise. Dr. Oller believes that healthy men who do not meet the necessary physical requirements of the sport, as it is played at present,

should not be allowed to play. He recommends that a physical examination for a license to play be made at least twice a season, at the beginning and at the end. Examinations should be carefully made and standards which apply both before and after violent exercise should be maintained. If a medical license is important for those who play regularly, it is doubly important for beginners, who usually are boys attracted by the glory of triumph during the football season, and who submit themselves to absurd and forceful training, without giving any attention to the condition of their bodies.

(To be continued)

BERLIN

(From Our Regular Correspondent)

Oct. 19, 1929.

Criteria for the Practical Application of Dental Care in the Schools

The German central committee on the organization of dental care in the schools has published the following criteria:

1. *The Purpose of School Dental Care.*—The purpose of school dental care is the prevention and control of dental caries in school children, together with hygiene of the mouth and the teeth, and thus the promotion of health in general. The final goal is to dismiss the children from school, at the end of the course, with a sound set of teeth and regular habits with regard to the care of mouth and teeth.

2. *Means for Attaining the Aforementioned Goal.*—(*a*) Awakening in the parents a consciousness of the need of dental care for their children and instruction of the children themselves concerning the care they should give the teeth; (*b*) keeping in close touch with the school to secure its cooperation; (*c*) regular examination of the school children by dentists, to be followed by treatment if needed; if regular examination by dentists is not yet feasible, examination by suitable physicians may be substituted; (*d*) endeavors looking toward the prophylactic improvement of tooth development, without neglecting close contact with all agencies established for the promotion of the health of the child; (*e*) awakening and strengthening of public interest in school dental care by every means available, particularly by instructive lectures.

3. *The Practical Application of School Dental Care.*—(*a*) At least annual dental examination of all children (a more frequent examination being required in the case of children with especially poor teeth); (*b*) examination to be followed by expert treatment of discovered defects, since the peculiarity of tooth disorders and their sequels is not compatible with long delayed treatment; (*c*) within the sphere of necessary treatment belong also measures for the elimination of irregularities in the eruption and alinement of teeth and abnormalities of jaw formation; (*d*) before the treatment of children is undertaken, the consent of parents or their legally constituted guardians must be secured; (*e*) examinations and subsequent treatment (if required) should be carried out in accordance with systematic and definite plans; (*f*) the same care should be given the temporary or milk teeth that is accorded the permanent teeth, and (*g*) great care should be taken to see that every single child is examined and receives treatment, though that is sometimes difficult to attain unless the treatment is given during school hours.

4. *The Range of Children to Be Examined and Treated.*—(*a*) Examination should be applied to all children of school age, including the pupils of higher institutions of learning and professional schools; (*b*) all pupils requiring dental treatment should receive it; treatment is given by the school dentists or by private dental practitioners; also children of preschool age should, as far as possible, be examined and treated; for example, the children in the kindergartens.

5. *Facilities Required.*—For the examination of pupils, the ordinary instruction rooms will usually suffice, in case there are no special rooms available in the school building. For the treatment, however, rooms with modern technical equipment are needed.

6. *Source of Funds for School Dental Care; Expenditures.*—The expense of local school dental care is borne by the respective communes or by communal leagues. It is sometimes desirable (depending on conditions), in carrying out school dental care, to form working agreements with the carriers of social insurance, the dental profession and the leagues for the promotion of public and private welfare. The cost of equipment and likewise the application of school dental care is borne by the communes. In view of the interest that insurance carriers have in the application of health measures to their members, they might reasonably be asked to contribute toward the cost of school dental care.

7. *School Dentists.*—The practical application of school dental care lies in the hands of graduate dentists—notwithstanding the statement contained in *2 c* concerning the dental examination. School dental care may be entrusted to dentists who devote themselves exclusively to school dental care (full-time officers), or to private dental practitioners who devote only part of their time thereto (part-time officers), the compensation being either on the basis of a fixed salary or on the basis of the number of persons examined and treated. If private dental practitioners are employed on a part-time basis, the preconditions are that (*a*) all pupils needing treatment shall be taken care of, and (*b*) the treatment must be given promptly, after the examination, in order to avoid harmful delay. Since the practice of school dental care requires adequate sociohygienic knowledge, if possible only such dentists should be engaged for the work as can show that they have completed successfully a thorough course in social dentistry at an academy for social medicine or at a university.

8. *Assisting Personnel.*—The dentists must have a sufficient number of assistants (nurses, aids) for the performance of the duties required by the service; for the paper work, communication with the school and the parents, escorting of pupils, and the like.

9. *Supervision.*—A permanent system of expert supervision of the administration of school dental care is in the interest and to the advantage of all persons concerned, for that is needed to assure the satisfactory application of the method.

Vital Statistics of Saxony for the Year 1928

The preliminary report on the vital statistics of Saxony for the year 1928, published by the statistical bureau of Saxony, contains the following information:

MARRIAGES

In 1928, 50,866 marriages were contracted as against 45,756 in 1927. This denotes an increase of 5,110, or 11.2 per cent, as compared with the previous year. The distribution according to the several quarters of 1928 was as follows: first quarter, 8,551 marriages; second quarter, 15,336; third quarter, 13,768; fourth quarter, 13,211. It is observable that the totals for the first three quarters were greater than the corresponding totals for the previous year, and that for the fourth quarter the reverse was true. This observation is doubtless connected with the fluctuations in the labor market. According to the reports of the nonindustrial public and private employment bureaus, for every hundred positions open in the first quarter of 1928 there were 366 men applicants; in the second quarter, 253; in the third quarter, 219, and in the fourth quarter, 412. The number of applicants for positions open during the first two quarters was relatively fewer than the corresponding figures for the previous year; however, the number of applicants during the third quarter exceeded by a small margin, and the figures of the fourth quarter by a greater amount, the corresponding figures for the previous year. It is a well known fact in connection with demographic observations that, other things

being equal, the frequency of marriage is somewhat greater when economic conditions are favorable than when they are unfavorable.

BIRTHS

In 1928, 81,313 living births were recorded as against 78,759 in 1927. The number of living births shows thus an increase of 2,554, or 3.2 per cent. The distribution among the several quarters of 1928 was as follows: first quarter, 20,537; second quarter, 20,921; third quarter, 20,084, and fourth quarter, 19,771. The increase in the number of living births is doubtless connected with the increase in the number of marriages observable since 1926 and possibly also with the comparatively favorable labor market conditions existing up to the end of March, 1928.

From the standpoint of demographic events in Saxony, during recent years, the large percentage of illegitimate children and the large number of stillbirths are characteristic. In 1928, there were 21.48 illegitimate births for each hundred births, as against 21.40 in the previous year. Furthermore, the number of stillbirths was 3.84 per hundred births, as compared with 3.89 in 1927.

DEATHS

The number of deaths in 1928 was 55,148, as against 55,429 in the previous year. During the first year of life, there were, in 1928, 6,642 deaths, as compared with 6,928 in 1927, or a decrease of 286 (4.1 per cent). The percentage of deaths per hundred living births was 8.25, in contrast with 8.60 for the year 1927.

EXCESS OF BIRTHS OVER DEATHS

The excess of living births over deaths, in 1928, was 26,165, as against 23,330 for the previous year. That denotes, therefore, an increase of 2,835 (12.2 per cent), which is pleasing. But it must not be overlooked that the total number of deaths in the future will undergo an increase by reason of the gradual progression of the middle age groups, which have at present a relatively high distribution, into the groups that lie just beyond, and that then, if the birth frequency remains at the present low status, it will be observable that the number of deaths will exceed the number of births.

LENINGRAD

(From Our Regular Correspondent)

Oct. 22, 1929.

Congress of Internists of the U. S. S. R.

The tenth Congress of Internists of the Union of Socialistic Soviet Republics was held recently in Leningrad, and was attended by 1,386 members from various parts of the country. A number of live and important topics were discussed, which fact is doubtless the explanation for the peculiar interest in the session and for the outstanding enthusiasm with which most of the scientific themes were presented.

THE SO-CALLED PERIPHERAL HEART

The first topic on the program, the question of the so-called peripheral heart, was discussed by Professor Kurshakoff, who expressed the opinion that at present Henle's generally accepted schema appears inadequate to explain a number of newly discovered facts concerning the movements involved in the circulation of the blood. As a supplement to the theory in regard to vascular tonus being the resultant of the biologic nature of the arteries whose province it is to further the blood circulation, the speaker brought forward the theory of the peripheral heart as elaborated and advanced by M. Janowski and his adherents. According to Janowski's theory, the arterial system constitutes a system that promotes the circulation of the blood while acting synchronously with the heart. Every dilatation of the artery effected by the pulse wave is followed by an active contraction of the vessel. Such contractions produce a peristaltic wave with a course in a distal direction. The theory gains its support chiefly from the clinical facts established by the measurement of the force and frequency of the pulse and the determination of the blood pressure in the arteries (sphygmometry and sphygmomanometry, respectively). Under certain degrees of compression of the vessel, a peculiar pulse curve and an elevation of the peripheral blood pressure are observed, which fact is explained by the adherents of the theory as due to a more intense contraction of the vascular wall, such as occurs, for instance, in stenosis of the intestine. As a number of facts have not as yet been adequately explained, the speaker thinks that this theory may be accepted, for the present, only as a working hypothesis that throws a certain amount of light on a number of observations.

Sawodskoy described an experimental attempt to supply a solid basis for the theory. He studied a number of sphygmograms of typhus patients, and reached the conclusion that the observed changes in the form of the pulse curves are ascribable to an impairment of the vascular system and furnish a proof of insufficiency of the peripheral heart. The author confirmed his deductions by a series of experiments with dogs.

An opposing attitude toward the aforementioned question was taken by Professor Lang, who cited a number of experimental results. He stated that especial importance attaches to the epoch-making experiments of Professor Krawkow (who died recently), by reason of his demonstration of an independent periodic vascular contraction. These contractions, however, occur from ten to twenty times a minute; they are not of a peristaltic nature, and can therefore not have the power of promoting the circulation. Furthermore, the vascular contractions are entirely of a passive nature, resulting solely from the conversion, by the distention of the vascular wall, of kinetic energy into potential energy, which is followed by a reconversion into the kinetic energy of the blood circulation. If, therefore, the changes in the tonus of the vascular wall produce the onward movement of the blood, there is no synchronism to be observed between these contractions and the contractions of the heart, for which reason the term "peripheral heart" is unauthorized and incorrect. Clinical proofs that Janowski took as the basis for his theory could not be confirmed by the collaborators of Lang, on investigation; in fact, the weight of the evidence was on the other side. A definitive negative decision with respect to the question raised will not be possible, Lang emphasized, except on the basis of a series of carefully conducted experiments. However, the experiments published thus far appear to weaken rather than strengthen the theory of the peripheral heart. The two papers awakened a lively discussion, in which reference was made to a vast amount of clinical and experimental material.

PARAVERTEBRAL ANESTHESIA IN ANGINA PECTORIS

In a second paper, Pletnew and Chessin reported the results of their trials, in angina pectoris, of paravertebral anesthesia of the first, second and third ganglions by means of 1 per cent solution of procaine hydrochloride and subsequent injection of 5 cc. of 70 to 80 per cent alcohol into each ganglion. The interest of the paper lay in the large series of cases reported and the observations continued over a long period of time. The authors regard the therapeutic effects as unquestionable, as regards not only the immediate but also the more remote results. They reach the physiologic conclusion also that the stimulation of a certain innervation region may be regarded as the cause of the cardialgic attack.

THE CLINICAL ASPECTS OF THROMBOSIS OF THE CORONARY ARTERY

Great interest was awakened in the paper of J. Shpirt, who, in a series of carefully conducted experiments, studied the clinical aspects of thrombosis of the coronary artery. The pathologicophysiologic method employed by the author consists in a combination of the methods of Starling and of Morawitz, with simultaneous ligation of various branches of the left

coronary artery in dogs. The experiments have shown that, if the heart is weak, the amount of blood flowing into the greater circulation is diminished; the coronary circulation, on the contrary, is almost doubled. On the basis of his experiments, the author maintains that, in an infarct of the myocardium, coincident with the development of cardiac weakness the supply of blood to the heart is increased, which fact is revealed by a disappearance in the patient of the anginose condition. The ligation of the smaller branches of the ramus descendens of the left coronary artery had no effect either on the coronary blood circulation or on the elevated blood pressure. That is confirmed by the fact that several thromboses of the smaller coronary arteries may exist at the same time, though clinically unobserved. Furthermore, the ligation of the ramus descendens of the left coronary artery produced a weakening of the left ventricle, a lowering of the blood pressure and a diminution of the coronary circulation, with subsequent restoration of the beginning values. From this it may be concluded that low blood pressure is a result of coronary thrombosis and that the status asthmaticus is a result of the weakness of the left ventricle.

SYPHILIS OF THE LIVER AND OF THE KIDNEYS

The second main topic on the program of the session was syphilis of the liver and of the kidneys. Two highly interesting papers on the subject were presented and announced a perceptible increase in visceral syphilis after the Great War, particularly syphilis of the liver and (the much rarer) syphilis of the kidneys. However, for every diagnosed case there are still two cases that remain undiagnosed. That fact was confirmed by Prof. N. A. Ssemaschko, the commissioner of the public health service, who visited the congress and greeted the members in the name of the commissariat.

PARATYPHOID

The last paper on the program was presented by Prof. G. Ivashenzeff, who, on the basis of more than 150 clinical observations on cases of paratyphoid, expressed the opinion that a precise clinical diagnosis of the typhose type (caused by the Schottmüller bacillus) and of the gastro-enteritis type (*B. enteritidis* Breslau) is possible only by means of most careful bacteriologic and serologic analysis. Careful attention should be given the type caused by *B. suipestifer*, as its representatives (for example, the Voldagsen species) frequently cause acutely septic and persistent septicopyemic disease forms. At the same time, of course, the rôle of the macro-organism must not be neglected.

(To be continued)

Marriages

ELEANOR E. COWAN, Boston, to Mr. George Lennard Gregory of Pittsfield, Mass., at Dorchester, Mass., August 9.

MAXWELL EARLE STONE, Muskegon, Mich., to Miss Bessie Lancaster of Ann Arbor, at Prophetstown, October 19.

CHARLES R. MOON, Little Rock, Ark., to Miss Marjorie Sneed of Oklahoma City, September 18.

JAMES H. ARNOLD, Lebanon, Ohio, to Miss Mary Ellen Brower of West Alexandria, October 16.

CHARLES W. DANIELS, Atlanta, Ga., to Miss Georgene L. Terpering of New York, in October.

NORMAN C. REGLEIN, Michigan City, Ind., to Miss Hazel Pugh of Dearloss, Mont., October 7.

F. WILLARD BROWN, Dwight, Ill., to Miss Agnes Michaelson of Kankakee, October 31.

THOMAS F. KRAUSS to Mrs. Ethel Wilcox Hardy, both of Rockford, Ill., October 26.

ADRIAN EUGENE DAVIS, Akron, Ohio, to Miss Pauline Harper, October 19.

Deaths

Harry Hayes Hines ⊕ Cincinnati; Miami Medical College, Cincinnati, 1899; member of the American College of Surgeons; assistant professor of surgery, pathology and principles of surgery at his alma mater, 1900-1910; at one time assistant clinical professor of surgery, University of Cincinnati College of Medicine; aged 53; formerly on the staffs of the Cincinnati General Hospital, Children's Episcopal Hospital and the Good Samaritan Hospital, where he died, October 13, of facial erysipelas and edema of the lungs.

William Wolfe Golden ⊕ Elkins, W. Va.; Medical Department of the University of the City of New York, 1892; member of the American College of Surgeons; past president and secretary of the West Virginia State Medical Association; past president of the Randolph County Medical Society and the West Virginia State Board of Health; aged 62; medical superintendent of the Davis Memorial Hospital, where he died, suddenly, October 14, of heart disease.

Henry Augustus Bacon, Philadelphia; Medico-Chirurgical College of Philadelphia, 1895; member of the Medical Society of the State of Pennsylvania; formerly associate professor of clinical surgery, Temple University School of Medicine; on the staffs of the Samaritan and Garretson hospitals; aged 61; died, October 14, of cirrhosis of the liver.

Ralph Newbury Prentiss, Brooklyn; Baltimore Medical College, 1900; Columbia University College of Physicians and Surgeons, New York, 1905; member of the Medical Society of the State of New York; formerly on the staff of the Brooklyn Hospital; aged 48; died, October 31, of heart disease and cerebral hemorrhage.

George Taylor Klipstein, Alexandria, Va.; Jefferson Medical College of Philadelphia, 1880; member of the Medical Society of Virginia; past president of the Alexandria City Medical Society; for many years on the staff of the Alexandria Hospital; aged 75; died, September 5, at Los Angeles, of angina pectoris.

Joel Clifford Griswold, Fitzpatrick, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1905; member of the Medical Association of the State of Alabama; served during the World War; aged 48; died, October 25, at the U. S. Veterans' Hospital, number 84, Algiers, La., of chronic pulmonary tuberculosis.

Patrick Somers Smyth ⊕ Boston; Harvard University Medical School, Boston, 1904; member of the New England Ophthalmological Society; formerly on the staffs of the Carney Hospital and the Massachusetts Eye and Ear Infirmary; aged 52; died in October, of rheumatic heart disease.

Maurice Maximilian Berger, New York; Baltimore University School of Medicine, 1898; member of the Medical Society of the State of New York; on the staff of St. Mark's Hospital; aged 56; died, October 26, of carcinoma of the pancreas and gastric hemorrhage.

Herbert L. Kneisley, Hagerstown, Md.; University of Maryland School of Medicine, Baltimore, 1905; member of the Medical and Chirurgical Faculty of Maryland; veteran of the Spanish-American War; aged 51; died, October 10, of chronic myocarditis.

Lewis A. Twining ⊕ Center Moriches, N. Y.; University of Buffalo School of Medicine, 1894; on the staff of the Southside Hospital, Bayshore; aged 58; died, September 27, in a sanatorium at Brentwood, of cerebral hemorrhage and chronic myocarditis.

Jean M. Martin, San Francisco; College of Physicians and Surgeons, Los Angeles, 1905; member of the California Medical Association; for fifteen years on the staff of the Children's Hospital; aged 58; died, September 15, in Paris, France, of heart disease.

Holland Phillip Long, Dillsboro, Ind.; University of Louisville (Ky.) School of Medicine, 1897; member of the Indiana State Medical Association; on the staff of the Dillsboro Sanitarium; aged 55; died, October 10, of tuberculous meningitis.

Albert Danielsen ⊕ Council Bluffs, Iowa; Creighton University School of Medicine, Omaha, 1923; aged 30; died in September at the Moore Hospital, Boone, of cerebral hemorrhage and injuries received in an automobile accident.

Newcomb Rush Nowlin, Oklahoma City, Okla.; University of Tennessee College of Medicine, Memphis, 1909; member of the Oklahoma State Medical Association; aged 58; died, October 21, of myocarditis and arteriosclerosis.

William Bennet Dunlap, Hollins, Ala. (licensed, Alabama, 1883); member of the Medical Association of the State of Alabama; aged 85; died, July 1, at the Memorial Hospital, Sylacauga, of acute intestinal obstruction.

Dupree Meriwether Hall, Hathorne, Mass.; Medical Department of Columbia College, New York, 1894; aged 57; died, October 14, at the Danvers (Mass.) State Hospital, of cerebral hemorrhage and arteriosclerosis.

Ralph de Lecaire Foster ✠ San Diego, Calif.; Hahnemann Hospital College of San Francisco, 1899; member of the Pacific Coast Oto-Ophthalmological Society; aged 54; died, October 5, of agranulocytosis.

Elmer Alonzo D. Jones, Sioux Falls, S. D.; University of Louisville (Ky.) School of Medicine, 1898; served during the World War; aged 59; died, September 17, at the Sioux Valley Hospital, of erysipelas.

Jacob H. Sherman, Manchester, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1890; aged 68; died, September 12, at the Maryland General Hospital, Baltimore, of lobar pneumonia.

William Monroe Hestle, Burnt Corn, Ala.; Medical College of Alabama, Mobile, 1885; member of the Medical Association of the State of Alabama; aged 73; died, May 22, of cerebral hemorrhage.

Josiah Edwin Hawkins, San Angelo, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1921; aged 34; died, September 13, of pulmonary tuberculosis.

Alfred A. Tucker, Cincinnati; Miami Medical College, Cincinnati, 1880; aged 72; died, October 16, at the Deaconess Hospital, of hypostatic pneumonia and uremia.

William F. Holmes, Stewardson, Ill.; Rush Medical College, Chicago, 1897; proprietor of a hospital, bearing his name; aged 62; died, September 26, of carcinoma.

James W. Mayes, Kinder, La.; Missouri Medical College, St. Louis, 1898; aged 56; died, September 24, at St. Patricks Sanitarium, Lake Charles, of myocarditis.

William A. Dafoe, Madoc, Ont., Canada; University of Toronto Faculty of Medicine, 1878; Trinity Medical College, Toronto, 1878; aged 78; died, October 28.

Harry Garritt Gaylord, Indianapolis; Miami Medical College, Cincinnati, 1888; aged 71; died, October 13, of cerebral hemorrhage and hypostatic pneumonia.

Clarence G. Sayers ✠ Detroit; Detroit College of Medicine and Surgery, 1903; aged 50; died, September 27, while in his garage, of carbon monoxide poisoning.

Carl E. Hostetter, New Richmond, Ohio; University of Louisville (Ky.) School of Medicine, 1889; aged 67; died, April 27, of cerebral hemorrhage.

Harland Clinton Nicholson, Ardmore, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1904; aged 52; died, October 20, of heart disease.

John J. Kessing, Oakland, Calif.; State University of Iowa College of Medicine, Iowa City, 1895; aged 65; died, August 21, of endocarditis and cholecystitis.

Henry Skinner Hathaway, New York; Medical Department of Columbia College, New York, 1890; aged 57; died, October 14, of arteriosclerosis.

Vincent Aldridge, Smithboro, N. Y.; Long Island College Hospital, Brooklyn, 1899; aged 72; died, October 13, at Elmira, of carcinoma of the liver.

John A. Hensel, Eureka, Utah; Gross Medical College, Denver, 1894; veteran of the Spanish-American War; aged 64; died, September 1.

John Edward Oliver ✠ Stockton, Calif.; Jefferson Medical College of Philadelphia, 1885; aged 66; died, October 5, of chronic myocarditis.

R. E. Guy Smith, Westmount, Que., Canada; McGill University Faculty of Medicine, Montreal, 1896; aged 61; died, September 16.

John C. Davis, Los Angeles; College of Physicians and Surgeons, Keokuk, Iowa, 1883; aged 74; died, September 3, of myocarditis.

David F. Rae, Glendale, Calif.; Trinity Medical College, Toronto, Ont., Canada, 1883; aged 73; died, August 6, of angina pectoris.

John Rutherford Rodgers, Carlisle, Pa.; Western Reserve University School of Medicine, 1885; aged 69; died, August 31.

Paul C. Dulitz, Detroit; Chicago Medical College, 1885; aged 67; died, in October, of auricular fibrillation.

Henry B. Preston, Jerry City, Ohio; Medical College of Ohio, Cincinnati, 1903; aged 72; died, October 1.

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Day's Asthma Powder.—William D. Day and Company of Lawrenceville, Pa., shipped in November, 1928, from Pennsylvania to New York a quantity of Day's Asthma Powder that the government declared was misbranded. When analyzed by the federal chemists, the powder was found to consist essentially of a mixture of stramonium leaves and potassium nitrate. The statements on the trade package were to the effect that the product had curative and therapeutic value in asthma, hayfever, croup, influenza, diphtheria, etc. These claims were declared false and fraudulent, and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16252; Issued October, 1929.*]

Munyon's Grippe Remedy.—The Munyon Remedy Company of Scranton, Pa., shipped in January, 1929, from Pennsylvania to New York a quantity of Munyon's Grippe Remedy that was declared misbranded. The preparation was found to consist essentially of sugar, with a trace of arsenic. The claims made for it were declared false and fraudulent and made in reckless and wanton disregard of their truth or falsity. In March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16262; Issued October, 1929.*]

P. and R. Chlorine Bombs.—The National Research Corporation of San Francisco shipped in June, 1928, from California to Oregon a quantity of P. and R. Chlorine Bombs that were declared misbranded. When analyzed, the federal chemists found that each ampule ("bomb") contained about ⅓ gram of chlorine. The statement on the label, that the product was "positively not poisonous" and was "absolutely harmless," was declared false and misleading, while the therapeutic claims made for the use of the product in influenza, bronchitis, etc., were declared false and fraudulent. In April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16258; Issued October, 1929.*]

Bronchuletts.—The International Laboratories of Rochester, N. Y., shipped in December, 1928, from Rochester to Philadelphia a quantity of Bronchuletts, which the federal authorities declared was misbranded. Each tablet, on analysis, was found to contain about 1 grain of acetanilid and 4/10 grain of quinine sulphate, together with camphor and laxative plant drug extractives. The trade package contained false and fraudulent therapeutic claims, and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16263; Issued October, 1929.*]

Thompson's Grippe and Cold Tablets.—The Owl Drug Company of San Francisco, Calif., shipped into the state of Washington in January, 1929, a quantity of Thompson's Grippe and Cold Tablets that the government officials held was misbranded. When analyzed by the federal chemists, each tablet was found to contain about ¼ grain of quinine with camphor, licorice and sugar. The curative claims made for the tablets were declared to be false and fraudulent, and in March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16257; Issued October, 1929.*]

Meyer Red Diamond Salve.—The Meyer Bros. Drug Company of St. Louis, Mo., shipped in September, 1928, and January, 1929, a quantity of Meyer Red Diamond Throat and Chest Salve to New Orleans, which the government declared was misbranded. It was found, on analysis, to consist essentially of petrolatum and wool fat, with oil of turpentine and menthol. It was recommended for pneumonia, whooping cough, spasmodic croup, sore throat, influenza, etc., and the claims made were declared false and fraudulent. In March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16275; Issued October, 1929.*]

Si-Nok.—The Si-Nok Company, Indianapolis, Ind., shipped in January, 1929, to Cincinnati a quantity of Si-Nok that was declared misbranded. The preparation was found, on analysis, to consist essentially of a mineral oil containing turpentine, eucalyptus, sassafras, menthol and camphor. The claims made

Instant Relief
A Real Preventive and Unequaled Remedy
for Sinus Troubles, Catarrh, Head Colds, Asthma, Hay Fever, La Grippe and all nasal ailments.
SI-NOK clears up the air passages and kills the germs. Its action is cooling, soothing, healing.
SI-NOK Jr. will keep children free from colds.
75c at your druggist's or by mail postpaid.
SI-NOK
SI-NOK
The SI-NOK Company
INDIANAPOLIS, INDIANA.
SI-NOK is sold and recommended by Schlegel Drug Stores and all other good druggists.

on or in the trade package were to the effect that the stuff was "insurance against infected conditions of the nose and throat" and recommended its use in the treatment of sinus trouble, hayfever, influenza and various other conditions. These claims were declared false and fraudulent and in March, 1929, the Si-Nok Company, having admitted the charges and consented to the entry of a decree, judgment of condemnation and forfeiture was entered and the court permitted the product to be released to the Si-Nok Company on payment of the costs and the execution of a bond, conditioned in part that the preparation be relabeled under the supervision of the Department of Agriculture.—[*Notice of Judgment 16269; Issued October, 1929.*]

Eagle Menthol Inhaler.—The Eagle Druggists Supply Company of New York City shipped in January, 1929, to Baltimore a quantity of Eagle Menthol Inhaler, which was declared misbranded. Analysis by the federal chemists showed that each tube of this product contained approximately 2½ grains of menthol. The claims made on the trade package, that this would instantly relieve asthma, influenza, neuralgia, sore throat, headache, etc., were declared false and fraudulent and made in reckless and wanton disregard of their truth or falsity. In April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16264; Issued October, 1929.*]

Cre Sot Rub.—The Drain Chemical Company of Baltimore shipped in October, 1928, from Maryland to Virginia a quantity of Cre Sot Rub that was declared misbranded by the federal authorities. When analyzed, the preparation was found to be an ointment containing creosote, eucalyptol, turpentine and camphor. The therapeutic effects claimed for the product in the treatment of pneumonia, tonsillitis, bronchitis, asthma, catarrh, eczema, enlarged glands, whooping cough, piles, etc., were declared false and fraudulent, and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16260; Issued October, 1929.*]

Nox-Mal-A.—The Savodine Company of New Bern, N. C., shipped in September, 1928, from North Carolina to Virginia a quantity of Nox-Mal-A that was declared misbranded. The preparation was found, on analysis, to consist essentially of epsom salt, a quinine salt and water. The claims made on or in the trade package for the product in the treatment of chills, fever, la grippe, neuralgia, malaria, etc., were declared false and fraudulent, and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16261; Issued October, 1929.*]

Correspondence

SPENCER GIVES TESTIMONIALS

To the Editor:—I wish to invite your attention to the advertising activities of a G. K. Spencer, who recently has been writing advertising copy for certain "patent medicine" concerns.

The Bureau of Medicine and Surgery, Department of the Navy, finds Spencer's statements very misleading and particularly objectionable because they give the impression that the articles advertised are widely used in the Navy and that they receive official recognition by the Navy. Also, it might appear to the uncritical reader that Spencer has some official connection with the Navy, and that his advertisements have the official sanction of the Navy.

An advertising publication called the Weldona Witness, undated, but marked "Vol. XV. No. 34" and published by the Weldona Corporation of 99 Chauncey Street, Boston, Massachusetts, carries a full page advertising article by G. K. Spencer entitled "At Sea with High-Seas Fleet—How Destroyer and Submarine Men Disperse Rheumatism." In this article Spencer gives high praise to Weldona Tablets and states that they are widely used in the Navy to prevent and to cure rheumatic conditions.

As a matter of fact, this bureau has no cognizance whatever of the drug mentioned.

This bureau is in receipt of a letter from the American Dental Association, dated Oct. 28, 1929, in which our attention is called to advertising matter written by Spencer in which he lauds a preparation known as "Pycope." This preparation is advertised as a cure and preventive against pyorrhea. Spencer states that it is widely used in the Navy and widely and highly endorsed by naval dentists. This bureau actually never heard of "Pycope" until Spencer's advertisement was received from the American Dental Association.

On account of the fact that these advertisements contain what purport to be endorsements of the advertised articles by the Navy Department, the question of Spencer's connection with the Navy was investigated.

The records show that Spencer, serving as a radioman, second class, was discharged from the Naval Reserve Force in 1925 on account of the unethical advertising activities in which he was engaged at that time. C. E. RIGGS, M.D., Washington, D. C.
Surgeon General, U. S. Navy.

TRANSILLUMINATION OF BREASTS

To the Editor:—In view of the great interest in this country and in England in the transillumination of breast tumors as brought to the attention of physicians by Dr. Max Cutler of the Memorial Hospital in New York (*Surg. Gynec. Obst.* **48**:721 [June] 1929) it is important that I record two solid tumors, one an intracanalicular myxoma, the other a small colloid cancer, which transilluminated as clearly as a simple blue-domed cyst. Dr. Bloodgood (THE JOURNAL, October 5, p. 1056) in his article on the blue-domed cyst and chronic cystic mastitis, has written: "I am not yet quite convinced that we have sufficient experience to justify our leaving such a tumor alone, because it transilluminates clear, but there must be exploration."

It is more than eight months since Dr. Cutler was good enough to demonstrate his method in our clinic in Baltimore, and it has been tried in more than a hundred cases. These are the first two, and the only two so far, in which solid tumors have transilluminated as cystic tumors. Clinically, the colloid cancer palpated like a cyst. It was a quiescent tumor of one year's duration. If one could have been absolutely certain that it was a cyst, there would have been no indication to operate. Up to the present time we have never had an opportunity to transilluminate a benign or malignant papillomatous cyst or a cancer cyst. As these two cysts usually contain blood, they would probably transilluminate dark.

In transilluminating breasts in which there is discharge of blood or other material from the nipple and in which no tumor could be palpated, on a few occasions we have revealed a dark shadow near the nipple and, on exploring this area, brought to light a duct filled with blood and, on removing this area, found a small papilloma in the duct.

L. CLARENCE COHN, M.D.,
Surgical Clinic, St. Agnes Hospital,
Baltimore.

EXFOLIATIVE DERMATITIS FROM POTASSIUM THIOCYANATE

To the Editor:—In THE JOURNAL, Sept. 28, 1929, p. 988, under the title of Exfoliative Dermatitis from Potassium Sulphocyanate Therapy, it is stated that "to date no mention has been made of potassium sulphocyanate . . . as a causative factor of an exfoliative dermatitis." The authors then proceed to describe what they believe to be the first reported case.

However, the priority of this observation should be given to Dr. Rudolph E. Logefeil of Minneapolis, who first described this toxic manifestation in a paper read before the Minnesota Society of Internists, May 5, 1928. The paper was later published in *Minnesota Medicine* (**12**:151 [March] 1929).

In the hypertension clinic of the Boston Dispensary, medical service of Dr. Joseph H. Pratt, we have also recently observed a typical case of exfoliative dermatitis associated with potassium sulphocyanate therapy. This occurred in a case of psychoneurosis in which the blood pressure was normal. After taking 0.6 Gm. of potassium thiocyanate daily for eight days, the patient developed weakness, abdominal cramps and diarrhea. The following day a generalized eruption appeared, occurring first on the extremities, next on the trunk, and finally on the face. When she was seen on the third day of the eruption, there were marked, generalized red maculopapular lesions. There was mild edema of the lower lids. The temperature was 99.5 F. The blood pressure was unchanged. There was moderate pruritus. On the sixth day after the onset of the eruption, the rash had practically cleared, and there was a beginning generalized exfoliation of the skin.

DAVID AYMAN, M.D., Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CAUSES OF DEATH OF FETUS

To the Editor:—Recently I was asked to make postmortem examinations of two new-born infants, one 3 days, one 24 hours, old. Both were fairly healthy at birth and cried normally. Each became cyanotic about twelve hours before death, became apathetic, would not cry or show normal reactions to external stimuli, in short, died without explainable cause. The postmortem appearances were negative except for these peculiarities. In each case, as each pleural cavity was opened, I was struck with the absence of crepitation in the lungs. I have not made many postmortems on babies, but Delafield and Prudden state positively that there is crepitation in the lungs of every new-born infant that lives. I believe it would be useless to argue about other possibilities, but I am interested to know what may be considered normal lung pictures in the new-born. Is this statement of Delafield and Prudden the normal finding? Do the lungs normally so expand that at least a majority of the alveoli dilate? Roughly, what proportion of expanded alveoli may one consider the minimum for normal lungs? Now I do not feel that I am at all expert in such matters, but this was my impression from sections made from specimens taken from these lungs: In the older baby, less than a third of the alveoli appeared dilated. A few dilated cells contained fluid. Of course, I realize that handling the specimens when resecting them from the lung may expel air from some of the cells. I should think, however, that more expansion should be expected at the third day. Sections from the lungs of the younger baby showed about the same percentage of expansion, but there was a suggestion of consolidation in the neighborhood of the bronchioles that made me wonder whether it was possible to develop bronchopneumonia in its brief existence. Both children may have died from patent foramen ovale or ductus arteriosus, I presume, as the possibility of demonstrating these conditions seems hardly likely owing to the difficulties of getting at the heart and vessels without subjecting them to some traction, and thus destroying the sought-for evidence. Still, the fact that both were not cyanotic at first argues against this. In both the thymus was normal.

GEORGE S. SILLIMAN, M.D., Gary, Ind.

ANSWER.—There is no difficulty in learning whether the ductus arteriosus or foramen ovale is patent in examining the bodies of infants. Both may be patent anatomically and cause no symptoms, the ductus arteriosus almost closed, the foramen ovale an opening directed through the interauricular septum so obliquely that it is closed by distention of either auricle. The question asked about the cause of death cannot be satisfactorily answered without knowing whether the heads were opened and the brains examined. All, or nearly all, the perplexities concerning what has caused death are results of postmortem examinations incomplete in some particulars, the usual omissions being failure to examine the head and brain, or the important structures in the neck. During the last decade there has been a decided trend away from explaining death of new-born infants by asphyxia. In place of respiratory difficulties, intracranial injuries sustained during birth are being found, solely because the examinations are more thorough. (Heidler, H.: Aut laesio intracranialis aut asphyxia neonatorum, *Ztschr. f. Geburtsh. u. Gynäk.* **91**:235, 1927.)

Among such injuries, bleeding from venous sinuses torn with lacerations of the tentorium cerebelli are most common. But intracerebral, intraventricular and leptomeningeal hemorrhages and contusions of the brain also occur. In the past, such injuries have not always been sought for. Particular care is necessary in order to expose subtentorial traumatic hemorrhages satisfactorily. The large sinuses of the dura in the back of the head commonly contain clotted and fluid blood after death. Blood from these large veins may easily be confused with hemorrhage before death or vice versa, and some technical skill is required to find lacerations in the sinus walls. Painstaking gross and microscopic examinations of the brain often disclose scattered small hemorrhages. Focal fatty changes in the brain of an infant were found by Cohen (Beitrag zur Frage des Schädeltraumas während der Geburt, *Zentralbl. f. Gynäk.* **51**:505, 1927) and attributed by him to bruising of the head during birth. The spots were grossly yellow; there were no hemorrhages; labor was prolonged in a primipara, and death thirty-four hours after birth was preceded by cyanosis and convulsions. Dollinger also has objected (Geburtstrauma und Zentralnervensystem, *Ergebn. d. inn. Med. u. Kinderh.* **31**:373, 1927) to the failure to exclude intracranial contusions and hemorrhage in infants whose deaths are registered under "inanition" and other vague designations.

After death the air may disappear from the lungs (Strassmann, G.: Beiträge zur Lehre vom Kindesmord, *Zentralbl. f. Gynäk.* **51**:2047, 1928); the air sacs of the lungs in infants are much smaller than those of adults; inflation and ventilation of

all parts of both lungs does not take place at once, and unfolding of minute bronchioles and air ducts is a gradual process which may require days or weeks; to ascertain the extent to which air has penetrated, microscopic examination of many places in each lung is necessary; infants are known to live for hours with such congenital maldevelopment of the lungs that air fails to get beyond terminal bronchioles (Macaggi, Domenico: La Vita apnoica Extrauterina, Genoa, 1927). A strong regular heart beat continuing for several minutes after birth has been observed with no respirations, and competent pathologists have reported finding lungs totally devoid of air in infants known to have cried out and lived as long as thirty hours after birth. Such conditions as these, together with the well known fallibility of the so-called hydrostatic tests, have resulted in a large literature dealing with the lungs of new-born infants. By most authorities a careful microscopic study of pieces taken from numerous deep and superficial parts of all the lobes of both lungs is regarded as the most competent method of determining the extent to which air has penetrated the alveoli. In such examinations, stains for elastic tissue and for reticulum are now regarded as essential. Unless there was fever, the peribronchial consolidation noted was probably made up of unexpanded air sacs. Additional information is given by Weimann, W.: Zur histologischen Untersuchungen der Neugeborenenlunge, *Deutsche Ztschr. f. d. ges. gerichtl. Med.* **12**:309, 1928, and such works on medical jurisprudence as Legal Medicine and Toxicology by Peterson, Haines and Webster; the von Hofmann-Haberda Lehrbuch der gerichtlichen Medizin, and Forensic Medicine by Sydney Smith.

USE OF GLUSIDE (SACCHARIN) — POSSIBLE DIABETES

To the Editor:—I am using saccharin in place of sugar at the table for the purpose of reducing weight and because Benedict's picrate test shows from 0.1 to 0.2 per cent of dextrose in the urine, although it has never reacted to Haines' copper test. Is there any deleterious effect from the use of saccharin? What amount may be used daily without bad effect? Is there any time limit for its use, in weeks or months, that should not be exceeded? The available literature does not give me any information on these points. The urine sugar has been about the same for two years, since the first test was made. Cutting out the sugar and preserves and pastry but eating plenty of bread, some potato, and all sorts of unsweetened stewed fruits and all vegetables, during the past eight months, resulted in a loss of 10 pounds (4.5 Kg.). I should like your comment on such a case developing into well marked diabetes, and if any further precautions are advisable. My age is 53. My weight is stationary at 185 pounds (84 Kg.); I weighed 215 pounds (97.5 Kg.) in 1918. My height is 68½ inches (174 cm.). Please do not publish name.

M.D., Missouri.

ANSWER.—The investigations into gluside have failed to show any harmful effect, except in doses much beyond those ordinarily used. Therefore there seems to be no reason why it should not be continued in the average sweetening doses for an indefinite period. It is a little difficult to decide whether such a case as is described might ever develop into well marked diabetes, although from the description the probabilities are against it. However, it would seem wise under the circumstances to have a sugar tolerance test done, especially noting the level of the blood sugar.

AORTIC REGURGITATION WITH DECOMPENSATION

To the Editor:—A man, aged 40, height 5 feet 6 inches (167.6 cm.), weight 140 pounds (63.5 Kg.), face pale, with a frightened expression, complains of shortness of breath, thirty to the minute. There is a continuous cough. He sleeps but little—awakens in great fright. The legs are swollen to the knees, with an itching eruption. The pulse is 120 and regular. The pulse beats are round to the touch, and bullet-like in following one after the other. The apex beat is two rib-spaces lower than normal. A mitral murmur is loudly transmitted through the carotid. There are no other heart murmurs. The blood pressure is 125 systolic and 15 diastolic (Tycos). The sounds are clear and distinct; the diastolic is distinct at 16 and lost at 15. The man and his wife say that he had not been conscious of any trouble, up to six weeks previously. What cardiac disease would account for the diastolic pressure? The specific gravity of the urine is 1.12; boiled, it settles with 50 per cent coagulum.

J. L. TRACY, M.D., Toledo, Ohio.

ANSWER.—This is probably a case of aortic regurgitation which is decompensating. The shortness of breath, cough, disturbed sleep, swollen legs and rapid pulse indicate decompensation. The description of the pulse corresponds to that of the Corrigan pulse. This, together with extreme ventricular hypertrophy and the low diastolic blood pressure, is quite characteristic of aortic regurgitation. The absence of a diastolic murmur is the only discordant note. Vaquez in his "Diseases of the Heart" (1924) states that an aortic murmur may be overshadowed by a rumbling Flint murmur. Also, "It always coincides with a very large communication between the aorta and the ventricle. . . . However, in the event of a double lesion and of a very narrow stenosis, the column of blood may be so small that its reflux produces no sound and there is then only a systolic murmur." Vaquez quotes two other authors who mention the absence of the typical murmur in aortic regurgitation. If there is no history of an old or recent streptococcic infection it would be well to make a Wassermann test on the blood or, if that is negative, a spinal fluid examination, because it is an established fact that syphilis is by far the commonest cause of diseases of the aorta in the adult. This might also explain the presence of such huge quantities of albumin in the urine.

USE OF TOXIN-ANTITOXIN

To the Editor:—Would you advise giving diphtheria antitoxin to children that are well and going to school, when there is no diphtheria in the community? If so, what would be the dosage and for how long a time would they be immune? As health officer of this community, I am often asked this question.

M.D., Minnesota.

ANSWER.—To give diphtheria antitoxin under these circumstances would serve no useful purpose and would not be justified. Such a time would be favorable for giving the immunizing toxin-antitoxin injections to such children.

SENSITIZATION TO SERUM

To the Editor:—In the report of a case of a sudden death following the administration of a concentrated pneumococcus serum (THE JOURNAL, September 7, p. 768) there are several points which are not clear and which may be of importance in accounting for the sudden death. In the first place, mention is not made of the route by which the first injection of 5 cc. of the concentrated antipneumococcus serum was given and whether this was given as an initial "desensitizing" dose. In the second place, mention is not made as to whether an intradermal skin test with serum was made prior to the injection. Thirdly, although mention is made of an "absence in the family history of hay-fever, asthma, or anything suggesting sensitiveness to horse emanations," there is no statement as to whether this patient had previously received antitoxin in any form even in the form of toxin-antitoxin which might have thus sensitized the patient to horse serum.

It seems unlikely that 5 cc. of serum given intramuscularly or intravenously would be tolerated for even fifteen minutes by a patient with a natural or atopic hypersensitiveness to horse serum. In this group even a fraction of a cubic centimeter given intramuscularly is sufficient usually to bring about a severe or even a fatal reaction. If a history of a previous injection could be obtained, this patient would then be classified in the group of acquired hypersensitiveness to horse serum as discussed in my recent article, entitled, "Rate of Absorption of Horse Serum After Injection" (THE JOURNAL, May 18), and would add another example of a fatality following reinjection of foreign serum, in spite of preliminary desensitization to the one which I reported (Fatalities Following Reinjection of Foreign Serum, *Am. J. M. Sc.* **175**: 325 [March] 1928).

This case stresses the importance, as brought out in these articles, of preliminary intradermal skin tests before the administration of immune horse serum, especially if given intravenously, and of the inadvisability of placing too much reliance on present methods of desensitization, unless these are modified to allow for longer time interval between the initial and subsequent injections.

LOUIS TUFT, M.D., Philadelphia.

ANSWER.—This communication was referred to Dr. Alexander M. Burgess, who writes:

"In commenting on the letter of your correspondent, I may say that I have recently been able to obtain further history. I found that the original history obtained was incorrect and that the patient had received at the age of 4 a dose of diphtheria antitoxin. This is undoubtedly the reason for her sensitization to horse serum.

"As recommended by Felton, the initial dose of 5 cc. was given intravenously without preliminary intradermal skin tests. The interval after this test should have been one hour instead of fifteen minutes. The nonappearance of symptoms in fifteen minutes is, however, surprising.

"The case certainly represents another 'fatality following reinjection of a foreign serum,' and I agree entirely with the statements of your correspondent, not only in regard to the inadvisability of relying too much on desensitization methods but also of being too confident in the refining and concentrating methods of preparation of the serums used in these cases."

BURNS OF SKIN WITH BROWN DISCOLORATION

To the Editor:—Kindly advise me as to which substances, when in contact with the human skin, will produce a burn accompanied by a dark brown or brownish-green discoloration. Please omit name.

M.D., Philadelphia.

ANSWER.—Burns caused by the various alkalis, by sulphuric, and by hydrochloric acid and by phenol sometimes turn brown or reddish brown as they become old. Phenol burns are sometimes purplish. Electrical burns complicated by metal, so-called metallized burns, are brown when copper is in them or brownish black when the metal is iron.

OSTEOMYELITIS OF PELVIS

To the Editor:—A girl, aged 6 years, had a painful spot on the inner side of the leg just below the ramus of the pubis, some elevation of temperature, and swelling of the right side of the labia. Roentgen examination showed osteomyelitis of the ischium and the ramus of the pubis. Drainage was established over the outer edge of the labia and the wound was packed with petrolatum gauze down to the ramus of the pubis. The condition has lasted four weeks. What more may be done now? What is the prognosis regarding life and disability in walking? How long before she should be allowed to walk?

MAYER SHOYER, M.D., Soldier, Kan.

ANSWER.—The Orr treatment for osteomyelitis is the preferred method for osteomyelitis at present. This consists of débridement by thorough surgery, the application of petrolatum packs and the immobilization of the pelvis by means of plaster-of-paris casts. Absolute rest is of paramount importance, and the application of a double spica cast is about the only way this can be obtained. Unless the organism is virulent, the prognosis as to life is excellent. There should be little disability in walking.

TREATMENT OF SATYRIASIS

To the Editor:—Will you kindly offer some suggestions for the treatment of satyriasis in a man, aged 45, whose family and personal history and physical examination are all negative. The condition is not yet excessive but is rapidly becoming so. He is the father of three healthy children and denies venereal disease. He cannot take bromides in sufficient dosage to be of benefit, as even a small dose causes extreme drowsiness. He is a man of culture and refinement and finds his condition unbearable, as his wife is a semi-invalid and it is unthinkable for him to indulge in immorality. Please omit name and address.

M.D., Ohio.

ANSWER.—The condition referred to is almost invariably due to derangements in the central nervous system. A searching investigation by a psychiatrist is urgently indicated for this patient.

FIBRINOGEN AND BLOOD TRANSFUSION

To the Editor:—Is blood transfusion contraindicated in a patient who has had fibrinogen either orally or by hypodermic injection? If so, why? If given, has there been any report of a death and what was the cause of death? Please omit name.

M.D., Iowa.

ANSWER.—No. The action of fibrinogen on the coagulation of the blood is so slight that it cannot be a contraindication for the administration of blood in any case in which transfusion is indicated. The administration of fibrinogen could not be a contributory cause of death when death has followed a blood transfusion.

DIFFICULTY IN IRRIGATION OF BLADDER AND URETHRA

To the Editor:—I have a patient with a chronic gonorrheal urethritis of two years' standing. He gives a history of an infection ten years previous, which was cured but left a stricture that has to be dilated occasionally. A 28 F. sound now passes fairly easily. He has a good stream but complains that if the bladder becomes full without immediate emptying he must strain to start the stream, the time taken in emptying it on these occasions being double that of the natural process. For the past month I have been endeavoring to give him an intravesicular irrigation for the present infection by using 3, 4 or 5 feet of fluid pressure from an irrigating tank, but the cut-off muscle obstinately refuses to open, nor does an attempt at forced irrigation with a 100 cc. bulb syringe do any good at opening it. Is there such a condition as the compressor urethrae being so scarred as to refuse to open to irrigating fluids? Is the whole matter psychic? Can you offer suggestions toward irrigating the posterior urethra other than passing a catheter into it, as this always causes irritating prostatic symptoms? Please omit name.

M.D., New York.

ANSWER.—A rectal examination, of course, should be carried out to exclude disease of the prostate, such as either benign hypertrophy or a chronic prostatitis. Strippings from the prostate and vesicles may show the presence of pus, and this may give the clue for the presence of the chronic urethritis. If this examination is negative, the cystoscopic examination would be next in order that one might make a careful examination of the bladder neck as well as the inside of the bladder. Exploration of the urethra with a urethroscope and diagnostic bougies would next be in order. If this careful examination of the genito-urinary tract is negative, the patient should have a complete survey of his central nervous system to rule out the presence of organic disease that might account for the symptoms. It is possible, of course, that the whole matter is psychic; but this should be the last conclusion that one is to draw from the history. It is difficult to think of a lesion that might scar the compressor so that it would refuse to open to irrigating fluids. There is never justification for the use of 5 feet of fluid pressure to irrigate. Roughness in technic causes the cut-off muscle to rebel.

RECURRENT BOILS IN PAINTER

To the Editor:—I have a patient, employed as coach painter at the railroad shops, who has been having a series of boils for the last two years. They appear on any part of his body. All treatments, including vaccines, have proved fruitless. Can you advise any treatment, other than giving up his trade? What is there or could there be in the paints that would cause such a condition?

W. G. JONES, M.D., Sedalia, Mo.

ANSWER.—Two factors working in harmony may prove to be the basis for these resistant intractable furuncles. The first of these are the low-grade, nonspecific irritants common to practically all forms of painting. Thus, turpentine is an irritant, especially "wood turpentines." Linseed oil may contain irritants, such as acrylic aldehyde, and on through an extensive list of thinners, solvents, quick driers and paint removers. No one is the specific cause, and any or all may be contributory. These irritants more readily affect the dry-skinned workmen and may act either as a defatting agent, as a direct irritant, or through the combination of these two methods of harm.

The second apparently requisite factor is a "seeding" of the layers of an injured skin with low-grade pyogenic bacteria, or else a focus of infection carries bacteria to this injured skin. Usually under the former circumstances spreading takes place by contiguity and the majority of the furuncles are in a few limited localities. In the second situation the furuncles are likely to appear anywhere in highly separated portions of the body.

Because of this situation it is by no means certain that a change of trade would prove to be the remedy.

With some regard for the seeming disrepute that is thrown by many around the notion of "foci of infection," it still may be pointed out that therein lies a likely source of remedy. A careful rechecking of this patient for such "foci" may bring to light the basic cause of this condition. Should this prove to be fruitless, and in any case, something may be gained by a more careful work hygiene. Coach painting may call for the use of chemicals for the purpose of cleansing the hands, face or forearms. If so, fat should be reapplied to the skin, such as olive oil, ointment of rose water or hydrous wool fat.

Recently good experience has arisen in these cases through efforts to build up a general resistance through the use of cod liver oil, foods rich in vitamins, and the judicious use of ultraviolet radiation, preferably in the form of natural sunlight.

Neither a specific cause nor a specific remedy is known for these troublesome recurring furuncles.

DETERMINATION OF BLOOD SUGAR

To the Editor:—Kindly state whether the LaMotte blood sugar outfit, manufactured by the LaMotte Chemical Products Company, is sufficiently accurate for very careful clinical work. Also state whether the micro-saccharimeter, according to Albert A. Epstein and manufactured by the E. Leitz Company, is still considered reliable for exact practical clinical work.

S. N., M.D., Danville, Va.

ANSWER.—Either the LaMotte blood sugar outfit or the Epstein Leitz micro-saccharimeter will furnish data sufficiently reliable for clinical purposes when properly employed. In the case of the LaMotte outfit, which utilizes the new micro method of Folin (*J. Biol. Chem.* **77**:421 [May] 1928), the manufacturers give the limit of error as 10 mg. The older method of Epstein (THE JOURNAL, Nov. 7, 1914, p. 1667) utilizes the Lewis-Benedict trinitrophenol (picric acid) technic. The results with this method are a little high but quite adequate for clinical work.

Although information sufficiently reliable for clinical purposes may be obtained with either outfit, it is doubtful whether their accuracy is such that one should say that they were "sufficiently accurate for *very careful* clinical work" or "reliable for *exact* practical clinical work." For exact color comparison, one should use one of the standard colorimeters on the market. There is economy in this, since the same instrument may be used for other determinations, such as hemoglobin, blood urea, and the phenolsulphonphthalein renal function test.

TREATMENT OF RADIUM BURN

To the Editor:—Will you kindly send me the latest and approved treatment for radium burns of the female urethra. This condition has been present for five months. I should like the name of a book or literature on radium burns. Please omit name.

M.D., Florida.

ANSWER.—The treatment of radium burns of the female urethra is much the same as the treatment of radium burns occurring elsewhere on the body. In treating these burns at the meatus, one should exercise great caution in employing any therapeutic measure that might tend to promote stricture formation. For a superficial burn, palliative, symptomatic treatment usually suffices. The parts should be kept as clean as possible; energetic treatment should be instituted to prevent and relieve

infectious processes. Soothing applications commonly employed in the treatment of burns frequently are of great benefit. To relieve the pain an ointment containing powdered opium, extract of belladonna and cocaine hydrochloride in petrolatum may be used. Alkalization of the urine in some instances seems to give some relief, especially of the pain associated with urination. If the burn is confined to a small area, a caustic, as silver nitrate, may be employed to destroy the superficial injured tissues, and frequently promotes granulation and healing. During this procedure, particular attention should be given the margins of the involved area. In deeper and more extensive burns, diathermy or surgery may be indicated. However, in resorting to either of these measures one should give particular attention to eleminating infection and to the prevention of cicatricial narrowing of the urethral canal. Generally speaking, conservative symptomatic treatment is the method of choice, and more radical measures should be employed as a last resort only.

So far as is known, no textbook has been written which gives any extensive information relative to the treatment of radium burns. The following articles may be consulted:

Matsuoka: Radium Burns on the Skin, *Deutsche Ztschr. f. Chir.* **92.**
Treatment of X-Ray and Radium Ulcer, *Urol. & Cutan. Rev.*, August, 1922, p. 534.
Dean, A. L., Jr.: Ulceration of the Urinary Bladder as a Late Effect of Radium Applications to Uterus, THE JOURNAL, Oct. 1, 1927, p. 1121.

GWATHMEY METHOD OF OBSTETRIC ANALGESIA

To the Editor:—Will you kindly discuss the question of the Gwathmey method of analgesia in obstetric practice. The obstetrician of one of the hospitals with which I am connected has asked permission to use this method as a routine and has offered several laudatory comments from others in substantiation. The staff is unwilling to go on record unless this is a method which is of merit and is more or less well accepted. Kindly omit name.

M.D., Ohio.

ANSWER.—Gwathmey's method of obstetric analgesia is useful in selected cases. Most obstetricians use the morphine and magnesium sulphate, reserving the ether instillation in the rectum for special indications, such as rigid cervix and slow, painful dilatation. The subject is discussed in De Lee's Obstetrics, edition 5.

TREATMENT OF CHRONIC URTICARIA

To the Editor:—A well nourished woman, somewhat overweight, aged 38 years, a school teacher by occupation, has had attacks of urticaria almost continuously for six months. Breaking out occurs usually every afternoon, although she may have a slight eruption during other parts of day. She had an attack in 1915 for a few days which cleared up. She first noticed the present attack six months ago following extraction of two teeth. Procaine hydrochloride was used. Calcium has no apparent effect nor does the most careful attention to diet influence the attacks. The only time she appears to be relieved is for a day or so following brisk purgation. The general physical examination is negative. The patient does not, as a rule, have constipation. I would appreciate any suggestions as to care. Please omit name.

M.D., Wisconsin.

ANSWER.—The successful management of chronic urticaria may require prolonged study and experimentation with rather a large list of drugs. Careful history taking and thorough physical and laboratory examination often give clues of etiologic importance in these cases and the treatment is outlined accordingly. More often, however, no factors, such as foci of infection, or foods, can be found to be responsible for the trouble, and in such instances, of course, treatment has to be more or less empiric.

Since in the case outlined calcium has been of no service and regulation of the diet has not influenced the eruption, it is necessary to try out those drugs often noted to be beneficial in these cases, the most important of which are sodium nitrite, pilocarpine, sodium salicylate, acetylsalicylic acid, quinine, atropine, phenyl salicylate and thyroid extract, along with saline laxatives. Fischer's solution, administered intravenously, has been helpful in many cases, as has arsphenamine in cases occurring in syphilitic patients.

Local treatment differs in no way from that employed in acute urticaria. Severe outbreaks are usually relieved almost instantly by the hypodermic administration of epinephrine hydrochloride.

RELIEF OF URTICARIA BY EPINEPHRINE

To the Editor:—What is the most effective remedy used hypodermically for urticaria (eruption of the skin of arms and legs as well as palms and plantar surface of both feet with severe itching, especially after consuming meat, eggs and other proteins)? The duration of this syndrome in the patient in question is over two years.

TATIANA G. HERZFELD, M.D., New York.

ANSWER.—Prompt relief may usually be obtained from the hypodermic or, preferably, intramuscular injection of from 0.5 to 1.0 cc. of solution of epinephrine. This may be repeated as frequently as is required to keep the patient comfortable.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

COLORADO: Denver, Jan. 7, 1930. Sec., Dr. W. W. Williams, 224 State Capitol Bldg., Denver, Colo.

DELAWARE: Wilmington, Dec. 10-12, 1929. Sec., Dr. Harold Springer, 1013 Washington St., Wilmington, Del.

KANSAS: Topeka, Dec. 10, 1919. Sec., Dr. Albert S. Ross, Sabetha, Kan.

KENTUCKY: Louisville, Dec. 3-5, 1929. Sec., Dr. A. T. McCormack, 532 West Main St., Louisville, Ky.

LOUISIANA: New Orleans, Dec. 12-14, 1929. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans, La.

MARYLAND: Baltimore, Dec. 10-13, 1929. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore, Md.

NATIONAL BOARD: Feb. 12-14, 1930. In all centers where there are five or more candidates. Dir., Mr. E. S. Elwood, 225 South Fifteenth St., Philadelphia, Pa.

NORTH CAROLINA: Durham, Nov. 27, 1929. (Endorsement of Credentials only.) Sec., Dr. J. W. MacConnell, Davidson, N. C.

NORTH DAKOTA: Grand Forks, Jan. 7-10, 1930. Sec., Dr. G. M. Williamson, Grand Forks, N. D.

OHIO: Columbus, Dec. 4-6, 1929. Sec., Dr. H. M. Platter, 85 East Gay St., Columbus, Ohio.

PENNSYLVANIA: Philadelphia, Jan. 7-11, 1930. Bedside examination last two days in various Philadelphia hospitals. Dir., Dr. D. C. Koch, Harrisburg, Pa.

UTAH: Salt Lake City, Dec. 17-18, 1929. Director, Mr. S. W. Golding, 412 State Capitol Bldg., Salt Lake City, Utah.

VIRGINIA: Richmond, Dec. 3, 1929. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke, Va.

WASHINGTON: Seattle, Jan. 9-10, 1930. Basic Science. Dir., Mr. Charles Maybury, Olympia, Wash.

WEST VIRGINIA: Morgantown, Nov. 26-28, 1929. Sec., Dr. W. T. Henshaw, Public Health Council, Charleston, W. Va.

WISCONSIN: Milwaukee, Dec. 14, 1929. Basic Science. Sec., Prof. Robert N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis.

Wisconsin June Examination

Dr. Robert E. Flynn, secretary of the Board of Medical Examiners for the state of Wisconsin, reports the oral, written and practical examination held at Milwaukee, June 25-27, 1929. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Eighty candidates were examined, 71 of whom passed and 9 failed. Twenty-seven physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine		(1926)	83
Yale University School of Medicine		(1928)	78
Loyola University School of Medicine		(1929)	78
Northwestern University Medical School		(1928) (1929)	79, 83, 84, 85, 87 86,
Rush Medical College		(1929)	84
University of Illinois College of Medicine		(1927) (1928)	76, 94
Johns Hopkins University School of Medicine		(1928)	84
Harvard University Medical School		(1928)	82
Columbia University College of Phys. and Surgs		(1928)	75
University of Oregon Medical School		(1928)	80
University of Pennsylvania School of Medicine		(1928)	85, 87
Marquette University School of Medicine		(1928) (1929)	90, 75, 77, 79, 79, 79, 80, 81, 81, 81, 82, 82, 82, 82, 82, 83, 83, 83, 83, 83, 84, 84, 84, 84, 85, 85, 85, 86, 86, 86, 87, 89, 90
University of Wisconsin Medical School		(1927) (1928)	90, 77, 80, 80, 81, 81, 82, 84, 84, 84, 85, 85, 89, 90
McGill University Faculty of Medicine		(1928)	86
Queen's University Faculty of Medicine		(1928)	86
University of Alberta Faculty of Medicine		(1926)	80

College	FAILED	Year Grad.	Number
University of Pennsylvania School of Medicine		(1928)	1
Marquette University School of Medicine		(1929)	3
University of Wisconsin Medical School		(1928)	1
Osteopaths		(1929)	4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1928)	Colorado
Chicago College of Medicine and Surgery		(1927)	Illinois
Hahneman Medical College of Chicago		(1901)	Illinois
Loyola University School of Medicine		(1928)	Illinois
Northwestern Univ. Med. School		(1911), (1923), (1928)	Illinois
Rush Medical School		(1900), (1924), (1927)	Illinois, (1928) Oregon
University of Illinois College of Medicine		(1928)	Illinois
Kentucky School of Medicine		(1898)	Indiana
Tulane University School of Medicine		(1907)	Louisiana
University of Minnesota Medical School		(1926), (1927)	Minnesota
St. Louis University School of Medicine		(1928)	Louisiana
Washington Univ. School of Med.		(1927) Illinois, (1928)	Missouri
Creighton School of Medicine		(1916), (1928)	Nebraska

University of Buffalo School of Medicine	(1927)	New York
University of Pennsylvania School of Medicine	(1917)	Mass.
University of Tennessee College of Medicine	(1914)	Tennessee
Marquette University School of Medicine	(1928)	Minnesota
University of Wisconsin Medical School	(1927)	Virginia
University of Vienna Faculty of Medicine	(1904)	Iowa

Minnesota June Examination

Dr. E. T. Sanderson, secretary of the Board of Medical Examiners of the State of Minnesota, reports the oral, written and practical examination held at Minneapolis, June 18-20, 1929. The examination covered 12 subjects and included 60 questions. An average of 75 per cent was required to pass. Sixty-four candidates were examined and passed. Four physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1929)	88.5,* 92.5	
Rush Medical School	(1924)	93, (1928) 89.4	
University of Louisville School of Medicine	(1928)		92.1
University of Michigan Medical School	(1925)	90.2, (1927) 93.4	
University of Minnesota Medical School	(1926)	87.1, (1927) (1928) 85.4,* 85.4,* 87.1,* 90,* 91.5,* 92.4,* 93, (1929) 84.2,* 85.4,* 86.4,* 87,* 87.1, 87.1,* 87.2,* 87.5,* 88.1,* 88.1,* 88.2,* 88.3, 89,* 89.1,* 89.3, 89.4,* 89.6,* 90, 90.1,* 90.2,* 90.3,* 90.4,* 90.4,* 90.4, 90.5, 90.5, 90.6,* 90.6,* 91.1,* 91.1, 91.1,* 91.5,* 92, 92,* 92.1,* 92.4,* 92.5,* 93,* 93,* 93.1,* 94.1, 94.3,* 94.5,* 95.2*	93.5,
St. Louis University Medical School	(1928)		87.3
Marquette University School of Medicine	(1929)		93.5
University of Wisconsin Medical School	(1927)		92.6
University of Toronto Faculty of Medicine	(1924)		92.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville School of Medicine		(1928)	Kentucky
Harvard University, Medical School		(1925)	California
Washington University School of Medicine		(1928)	Maryland
University of Nebraska College of Medicine		(1917)	Nebraska

* These candidates have received their M.B. degrees and will receive their M.D., degrees on completion of one year's internship in a hospital.

Book Notices

SURGICAL PATHOLOGY. By William Boyd, M.D., M.R.C.P., F.R.S., Professor of Pathology, University of Manitoba. Second edition. Cloth. Price, $11 net. Pp. 933, with 490 illustrations. Philadelphia: W. B. Saunders Company, 1929.

This is a manual for hospital pathologists where the surgical work is mainly elective, and especially useful where hospitals are remote from medical schools and libraries. Most of the forms of disease reviewed seldom need first aid or emergency operations. Except for casual mention in the chapter on healing, such injuries as traumatic rupture of the liver, kidneys or spleen are not mentioned. Traumatic intracranial hemorrhage is briefly presented. The consequences of external violence to particular bones or joints are not systematically described; bullet wounds and stab wounds are omitted. In the second part, on special pathology, certain diseases of most of the important organs and of some other important structures are separately described. The diseases chosen are apparently those with which surgeons and hospital pathologists frequently establish contact. The heart and lungs are omitted, in spite of the fact that separate chapters are given to the rectum, spleen, pancreas and pituitary body. This seems odd in view of the remarkable importance recently acquired by primary tumors of the lungs. Effusions of the pericardium and wounds of the heart occasionally interest surgeons; a few surgeons are interested in mitral stenosis and angina pectoris. Certainly, the slight reference to foreign literature is surprising, notwithstanding the warning statement in the preface that this prevails; it is also unconventional. Some of the defects of the first edition to which attention was called (THE JOURNAL, March 14, 1925, p. 843) have been corrected, notably the removal of chapter II, on surgical bacteriology. No attempt is made in this edition to deal with surgical bacteriology comprehensively, and in its place a chapter on the surgeon and the laboratory is introduced. Some other faults still stand; for example, the "little significance" (p. 151) still attached to fat embolism, the failure to emphasize the danger connected with the injection of foreign proteins and the inadequate description of syphilis of the liver. In places the construction can be improved; for example: "This for two reasons," p. 35, stands as a sentence; the surgeon "must be something of a morbid anatomist," p. 18; "In about 50 per cent of malignant tumors accompanied by effusion, tumor cells may be found," p. 35; "The congenital class is due to some embryological defect," p. 353; "The principal cause of aneurysm of the aorta is syphilis which we have seen to produce such great," etc., p. 647. Bright touches are encountered in fragments of philosophy after the manner of Osler and these with many personal observations by the author are enlivening. Based possibly on the author's experience, the descriptions of some diseases are too long, others too brief. As noted in the first review, their teaching value, as a whole, is good. This edition contains about 100 more pages, and there is a considerable increase in the number of illustrations. Still bewilderment is natural that there should be any books in which authors attempt to describe solely the pathology of only such conditions as are likely to call for surgical treatment. This is ably done in textbooks on pathology, again in textbooks on surgery, and also by journals for each branch, those in surgery being especially numerous.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus, und P. Uhlenhuth. Lieferung 30, Band X. Das Plattenkulturverfahren und die Gewinnung von Reinkulturen. Von Dr. H. Lubinski. Anaërobenzüchtung. Von Dr. J. Zeissler. Anlegung und Pflege einer Kulturensammlung. Von Prof. Dr. E. Přibram. Die Methoden der Keimzählung. Von Dr. W. Klein. Third edition. Paper. Price, 22 marks. Pp. 184, with 95 illustrations. Jena: Gustav Fischer, 1929.

This issue is given up to discussions of bacteriologic technic. Koch's famous device of plating to obtain pure cultures and its later modifications are clearly and briefly described. The recent methods of single cell isolation are also treated in a satisfactory manner. An elaborate article by Zeissler on anaerobic cultivation follows and will prove invaluable to all interested in the differentiation of anaerobic types. Zeissler's article is enriched by useful tables and by figures showing morphologic and colony characteristics. The important subject of type culture collections is dealt with by Pribram, who, however, does not mention the American Type Culture Collection or the Lister Institute Collection. Methods and types of apparatus for counting bacteria are discussed by W. Klein. This author is apparently quite unfamiliar with the American technical and mathematical development of methods for the enumeration of *B. coli.*

DISEASES OF WOMEN: SYMPTOMS AND TREATMENT. By Franklin I. Shroyer, M.D. Cloth. Price, $2. Pp. 103. Boston: Richard G. Badger, 1929.

The first paragraph in the preface reads: "It is because of my great desire to be of service to that great multitude of suffering humanity in which disease and ill health have full sway that I agreed to have this book published." It is to the great misfortune of reviewers that the author condescendingly agreed to write this book unless he intended it as a joke book. In the first place, it is difficult to tell whether the book was written for physicians or for laymen, but the author usually addresses himself to lay individuals. In the second place, regardless of the author's purpose there is no need for such a book as he wrote. Thirdly, there are more misspelled words in this little book than the reviewer has seen in any twenty medical books all put together. A few examples are as follows: obstetrition, endomerium, partically, lymphathics, anterior posterior colpo Hystro Myomectomy, salphingitis, oophiritis, urethereal carnucle, dysmonorrhea, micturation, effinciency, idiosyncancries, Sturmford, Rubien, polipi. In the fourth place, the construction of sentences is somewhat foreign to the English language, as testified by the following few examples: "Motherhood is the greatest joy and happiness that a woman can experience but again the disturbance afterwards are frequently shocking, because of the injury done the tissues of these organs through the busy obstetrition in hurried delivery on his part and relief from any and all pain on the mother's part." "In any case that refuses operation or the shock of operation endangers their own life, such cases we treat with radium." "Malignant tumors of any organ are divided into two types, connective cells and Epithelia tissue cells. Of the Epithelia there are two varieties, carcinoma and chorion-Epithelioma—the

carcinoma may develop in the mucous membrane. . . ." "The repair materials are in food, multitudes eat not for efficiency but for the pleasure of eating." In the fifth place, the author expresses a few novel and revolutionary ideas, such as "My own individual policy is to treat all growths that I see as cancerous. I do not wait and watch, but institute most staple treatment. I must be positive that I recognize a tubercular gland or a simple fibroma, or a simple erosion of the cervix, before operating them without irradiating first." "Every patient with genuine cancer or suspicious cancer should be put upon a detoxicating diet; fruit juices, vegetable broth, with no meat extracts, raw fruit and vegetables and plenty of them." "It is well known that white flour and white sugar are real poison producers. . . ." "Such is the jam fed to millions of children. Is it any wonder then that a half million little children under the age of ten years die of pneumonia each year and that 100,000 people die each year of cancer with five times that number suffering from the dreaded disease." "There can be no doubt that refined food stuffs are to a degree responsible for the prevalence of cancer." "A patient should not place absolute faith in one doctor, seek the best advise available and insist upon the latest scientific treatment." It is a pity that publishers waste their time with such material as quoted, even if they are paid for it.

Biological Reversion and Hippocratic Anatomy. By Hubert Higgins, M.A., M.R.C.S., L.R.C.P., Demonstrator of Anatomy to Cambridge University. Cloth. Price, 7/6 net. Pp. 149. London: H. K. Lewis & Company, Ltd., 1929.

If the reviewer has been able by wading through the welter of words in this book to arrive at the real ideas behind them, the latter are:

1. Hippocratic anatomy consisted in becoming familiar by palpation with the "feel" of tissues and organs.

2. Biologic reversion is the term the author uses for the effects of a process of massage by which he hopes to make sick tissues become well by making them pass again in the reverse direction through the processes by which they changed from healthy to morbidity.

The method of massage seems to have originated in France and been practiced to some extent in Jamaica.

Pathologie der oberen Luft- und Speisewege. Herausgegeben von Prof. Dr. Felix Blumenfeld, und Prof. Dr. Rudolf Jaffé. Abteilung 1. Paper. Price, 48 marks. Pp. 288, with 108 illustrations. Leipzig: Curt Kabitzsch, 1929.

Cooperating with Professors Blumenfeld and Jaffé are Profs. A. W. Fischer and W. Pfeiffer of Frankfort-on-the-Main, H. Schlossberger of Berlin-Dahlem and H. Siegmund of Cologne; also, Drs. J. Berberich, also of Frankfort, M. H. Corten of Hamburg, K. Hellmann of Würzburg and G. Kelemen of Budapest. As it is projected, the work will consist of two parts not sold separately. In the first volume, constitution and inheritance as they affect the upper air passages are discussed by Blumenfeld; changes caused by external factors, by Pfeiffer and Schlossberger; circulatory disturbances and retrogressive processes, by Berberich and Kelemen; and malformations, by Corten. Postoperative wound healing, inflammations, metaplasia and tumors are promised for the second half of the work. An endeavor has been made to secure cooperation of a clinician and a pathologist for the important chapters, to provide bibliographies containing references to places where literature is dealt with extensively, and to limit illustrations to the unusual rather than to ordinary lesions portrayed so repeatedly in other works. More than half of the illustrations in this volume are in colors. The chapters on circulatory disturbances, retrogressive changes and malformations are well presented and interesting. Space does not allow mention of the many unusual forms of disease described and illustrated together with those more commonly observed, but the following will serve, perhaps, to indicate their scope: perforation of the esophagus by pigmented lymph glands; gouty, urea, urates, pigment, glycogen, and amyloid deposits of these regions; proboscis lateralis, lateral facial clefts other than harelip, and illustrations of the histology of many places, such as the true and false vocal cords, with both the customary stains as well as those for fat. For many of the subjects, the bibliographies are extensive. With the standards of this one continued in the forthcoming volume, the complete work promises to be a valuable reference work for students and specialists, a textbook to have at hand for all inquiries about diseases of the upper parts of the alimentary canal and respiratory organs.

Nephritis: Its Problems and Treatment. By T. Izod Bennett, M.D., F.R.C.P., Physician with Charge of Out-Patients, Middlesex Hospital. Cloth. Price, $1.85. Pp. 94, with illustrations. New York: Oxford University Press, 1929.

This monograph is based on three lectures (the Goulstonian Lectures) delivered before the Royal College of Physicians in London in 1928 in which the problems of uremia, of edema and of hypertension were discussed. It is of interest to note that Richard Bright delivered the Goulstonian Lectures on a similar subject in 1833, on which occasion he said "When albumin is proved to exist in the urine I look upon it with anxiety, and the confirmed derangement I always view with dread." The author develops his thesis in an orderly, clear and concise manner presenting numerous observations of his own, both clinical and experimental, as well as a thorough digest of the writings of other workers in this field. He stresses the probable greater importance of extrarenal factors over the renal factors, particularly when considering edema and uremia. He defines nephritis as a "syndrome comprising one or more of the following features: albuminuria, hematuria, edema, hypertension, and that group of phenomena described as uremia." An excellent working classification of nephritis is given and numerous diet lists are appended. The book should prove to be of real value to students and practitioners.

Verwertung der diagnostischen Laboratoriumsverfahren in der ärztlichen Praxis. Von Dr. Heinrich Lax, Chefarzt des Zentrallaboratoriums der Liget- und Parksanatorien, Budapest. Würzburger Abhandlungen. Band V, Heft 7. Von Prof. Dr. Joh. Müller. Paper. Price, 6 marks. Pp. 263-368. Leipzig: Curt Kabitzsch, 1929.

The advances in clinical diagnosis are so great, new methods of examination being introduced almost daily, that the general practitioner is often at a loss to determine the relative value of these new tests as compared with the older methods with which he has been familiar. This little book is timely, as it deals exclusively with the subject of the evaluation of the laboratory methods as applied to diagnostic work. There is no attempt to discuss the methods in detail, the author contenting himself with mentioning by name the tests which he considers of particular value in any especial condition. The discussions are clear and quite detailed, so that the reader is presented with definite bases for the conclusions reached by the writer. The subject matter is presented from the standpoint of clinical diagnosis and not from that of clinical medicine, so that the text covers such subjects as urine, blood, sputum, gastric contents and stools, rather than diseases per se. Under each heading are outlined the values of the different tests in the diagnosis of clinical conditions. The book should prove of great value to the general practitioner as well as to the laboratory worker, and may be recommended to those who may wish to go more fully into the question of the value of laboratory tests.

Laboratory Technique: The Methods Employed at St. Luke's Hospital, New York. By F. C. Wood, Karl Vogel and L. W. Famulener. Third edition. Cloth. Price, $3.75. Pp. 318. New York: James T. Dougherty, 1929.

In this edition the work has been thoroughly revised and brought down to date by the inclusion of such methods as extensive trial has shown to be most reliable and practical, and by the deletion of some obsolete matter. The book is divided into five sections, Dr. Wood assuming responsibility for the section on histologic methods, Dr. Vogel for the sections on clinical pathology and clinical analytic methods, and Dr. Famulener for those on bacteriology and serology. The selection of the methods presented is excellent and conforms to the generally accepted routine for such work. As is to be expected, the interpretation of the special tests is given little or no attention. The descriptive text is clear and concise and is well arranged but lacks illustrations, which are often of value in clarifying the text. This work should find ready acceptance by hospitals and by general workers who may wish a satisfactory and fairly comprehensive guide for their routine laboratory work.

L'AGRO ROMANO NEL PRIMO QUINQUENNIO FASCISTA. Relazione sull'incremento del bonificamento agrario e della colonizzazione nell'agro romano dal 1° Gennaio 1923 (I) al 31 Dicembre 1927 (VI). Paper. Pp. 191, with 196 illustrations. Rome: Tipografia Cuggiani, 1928.

Any one who ten or twenty years ago traveled through the country immediately surrounding Rome—the Roman campagna, as it is commonly called—will read with interest this well gotten up pamphlet issued by the Italian ministry of national economy under the general direction of the department of agriculture. In the five years from January, 1923, to December, 1927, the fascist government has brought about great changes in this territory, some of them really amazing. By splitting up large holdings, by compulsory productive cultivation of the soil, by building good roads and by digging ditches for drainage or irrigation, by erecting modern sanitary dwellings for settlers, together with adequate and modern barns, silos, dairy and other farm buildings, by insisting on modern methods of farming, it has changed the whole aspect of the campagna and its economic and social life. This has been accomplished by laws, which are briefly cited. There is a system of state aid and there are penalties for nonperformance and rewards for excellence. The facts are set forth in the volume largely by a series of photographs, often of the "before and after" style. Here is the marsh converted into a fertile kitchen garden, the weedy field yielding a rich crop of grain. Flocks of sheep and herds of cattle are shown with ample pasturage and suitable buildings. The cattle are not all of the wild native type that one is wont to associate with Italy. There are fine herds imported from Switzerland and the Netherlands. Ditching and road-building machines are shown at work; tractor plows are breaking up the hard soil; the grain is falling before the latest model of mower and reaper. One fact is especially impressive: in some pictures are seen side by side the well preserved remains of aqueducts of the time of the empire with the new concrete home and barns, the attractive school house, the electric power plant and the parked automobiles. Surely Italy is a country of contrasts, with its background and relics of antiquity and its modernity of thought and political theory that is expressing itself in concrete efforts to teach its citizens to help themselves and thus strengthen the state. There is a note of pride running all through this book as the accomplishments of the fascist government are brought to attention. But one who reads the work carefully must be convinced that this pride, even with a little boasting, is to be pardoned, for great things have been done with a rich promise of more in the near future. Often when Italian progress is mentioned, the opportunity is taken to criticize or ridicule Mussolini because he takes to himself the major share of the credit for what has been done. No doubt il Duce has been in close touch and sympathy with this splendid work of these five years. But unless it has been accidentally overlooked, his name is not mentioned in this monograph. Here, certainly, his other party leaders have been allowed to share in the glory of fascismo.

DIE BLUT-LIQUORSCHRANKE: Eine physiologische und klinische Studie. Von Prof. Dr. Fr. K. Walter, Direktor der Bremischen Heil- und Pflege-Anstalt. Paper. Price, 19 marks. Pp. 223, with illustrations. Leipzig: Georg Thieme, 1929.

This monograph should be read after reading Das Permeabilitätsproblem, by Ernst Gellhorn (reviewed in THE JOURNAL, April 13, p. 1297). Gellhorn deals with the general problems of permeability of living membranes, Walker with the same problems as they concern the interchange of the cerebrospinal fluid with the blood and the body tissues. This oscillation of the constitution of the cerebrospinal fluid is dependent on the composition of the blood and of fluid and other constituents bound at times to the body tissues and set free from them at other times. It is also dependent on fundamental laws of chemical equilibrium. Barrier, barrière hémato-encéphalique, ectomesodermal barrier, or the German term "sehranke" all refer to membranes, supposed to influence the production of cerebrospinal fluid and to modify its characteristics. Walker's review is thorough. It includes some personal investigations but is chiefly a carefully arranged summation of literature. The origin of the cerebrospinal fluid, the method of its origin, functional proof of a blood ⇄ fluid barrier, normal permeability and permeability in disease are discussed in separate chapters. These are followed by a supplement in which changes in the cerebrospinal fluid caused by prolonged death agony, albumin content, colloidal properties and ability to deviate complement are discussed together with the relation such features have to permeability of the membranes. The monograph is particularly useful for investigators in methods of clinical diagnosis and for sagacious clinicians accustomed to obtaining wide comprehension of matters with which their daily routine occasionally becomes interwoven.

A STUDY OF MASTURBATION AND THE PSYCHOSEXUAL LIFE. By John F. W. Meagher, M.D., F.A.C.P., Neurologist to St. Mary's Hospital, Brooklyn. Second edition. Cloth, $2. Pp. 130. New York: William Wood & Company, 1929.

This is a short, concise and readable discussion of the problem of masturbation, written for the physician rather than the layman. The subject is introduced by a discussion of the value of sex knowledge for the youth and a brief description of the disturbances resulting from the inadequate understanding of sexual phenomena by the child. The approach is definitely freudian. The prevalence of masturbation and its harmlessness are stressed, and emphasis is laid on the harm to the psychic organism resulting from shame and feeling of inferiority produced by repressive measures of treatment. Treatment is recommended through substitution of recreational and esthetic pursuits, as well as through the development of a greater ethical and social feeling.

CLINICA DE LA ENCEFALITIS EPIDÉMICA: Epidemiologia en Sud-América y en la R. Argentina. Estados agudos y crónicos. El parkinsonismo post-encefalítico. Sistema y síndromes extrapiramidales. La "psiquiatría de la región mesocefálica." La demencia bradifrenica. Forma endócrina, respiratoria, disfásica, espasmódica. Pronóstico. Tratamiento. Por Dr. Gregorio Bermann, professor titular de la Facultad de Medicina de Córdoba. Paper. Pp. 226, with 15 illustrations. Córdoba: Lutz Ferrando & Cia, 1929.

This is a treatise in Spanish giving the main general facts about epidemic encephalitis, and in particular its incidence and behavior in Argentina. It differs from preceding monographs in giving more space to the psychiatric phases of the chronic stage. One chapter is devoted to the "psychiatry of the mesencephalic region," one to "dementia bradyphrenica," one to "affective depressive syndromes," and one to "perversions of character and conduct." At the end is a bibliography of the Argentine literature on the disease, beginning with 1920 and containing seventy-five titles.

RECENT ADVANCES IN OPHTHALMOLOGY. By W. Stewart Duke-Elder, M.A., D.Sc., Ph.D., Assistant Ophthalmic Surgeon, St. George's Hospital. Second edition. Cloth. Price, $3.50 net. Pp. 405, with 114 illustrations. Philadelphia: P. Blakiston's Son & Company, 1929.

This is one of a series covering the recent advances in all branches of medical science. A considerable amount of new material has been added to the first edition and some that appeared in the first has been omitted. The first chapter, on the nature of light, includes the latest information on the structure of the electron and its bearing on the nature of light and new knowledge on the absorption of light by the eye, optic nerve currents and chronaxia of the retina. The chapter on embryology includes the origin of the vitreous. The chapter on the slit lamp is more complete than in the first edition and deals chiefly with the lens and vitreous. The circulation of the blood and the aqueous humor is sufficiently dealt with, as are the pathologic changes arising from disturbances of each system. The chapter on cataract, in addition to a good classification according to etiology, gives the morphology of the condition as well as recent work on lens protein. Intracapsular extraction is discussed. One chapter is devoted to ultraviolet therapy and to general and local phototherapy. The neurologic section deals with visual paths and centers and the oculomotor system, the trigeminal nerve, the labyrinth and the cerebellum. The final chapter deals with the neuropsychologic foundations of vision. The book contains a good bibliography at the end of each chapter. It is intelligently outlined, well written, and should be studied by all interested in the more recent contributions to the existing knowledge of ophthalmology. The book itself with its bibliography may well be used by students of ophthalmology as a guide for their reading in this field.

ERGEBNISSE DER ENCEPHALITIS-FORSCHUNG. Von Dr. H. Willer. Würzburger Abhandlungen. Band V, Heft 5. Von Prof. Dr. Joh. Müller. Paper. Price, 1.80 marks. Pp. 225-240. Leipzig: Curt Kabitzsch, 1929.

In this reprint the chief etiologic and pathogenic theories concerning encephalitis are briefly reviewed.

Medicolegal

Factors Determining Reasonableness of Fees

(Pfeiffer v. Dyer (Pa.), 145 Atl. 284)

The plaintiff, Pfeiffer, was called by the defendant, Dyer, to treat the defendant's wife. She had been in poor health for some months, and no satisfactory diagnosis had been made by the physicians who had examined her. The plaintiff concluded that she was suffering from a malignant tumor of the large intestine and informed the defendant that an operation was necessary to save his wife's life. When an operation had been determined on, the defendant said to the plaintiff that he would not ask what the cost would be, as he was able to pay. To this, the plaintiff replied that it was his custom to charge a fee satisfactory to the patient, to the family physician, and to himself. No figure was named and nothing further was said on the subject of compensation. While the operation was under consideration, the patient developed an obstruction of the bowel, which made an immediate operation imperative. The plaintiff thereupon performed a series of operations by which the obstruction was obliterated and the tumor removed. No return of the tumor had manifested itself at the expiration of three years, and when the supreme court of Pennsylvania passed on the case she was in good health.

The plaintiff consulted with other surgeons of established reputation and with the patient's family physician as to what would be a proper charge for his services. Their estimates varied from $2,000 to $5,000. He sent to the defendant a bill for $3,000. The defendant refused to pay this, claiming that the charge should have been $300, but expressed his willingness to pay $500. In an effort to adjust the situation amicably, the plaintiff wrote to the defendant's wife, the patient in the case. In the course of his letter he said:

> I sent Mr. Dyer a bill for $3,000, which is, I admit, a large fee, and more than I would have asked on my own initiative as I am distinctly a modest charger, but I did this on excellent advice and in the belief that it would work no hardship on you, as I know that Mr. Dyer is a prosperous man who does not hesitate over such a sum when it concerns anything that pleases him.

The defendant, however, did not pay and the plaintiff obtained a judgment against him for $3,000, with interest. From that judgment, the defendant appealed to the supreme court of Pennsylvania.

In support of his appeal, the defendant urged that the letter written by the plaintiff to the defendant's wife showed that the plaintiff himself recognized that his charge was excessive. The court, however, did not so construe the plaintiff's letter but interpreted it as meaning merely that the plaintiff had fixed what he thought was a proper charge, after being advised by those qualified to measure it. The defendant, Dyer, argued further that the conversation between him and the plaintiff with regard to the plaintiff's charges, stated above, was a special contract as to the amount of the plaintiff's compensation. The court was of the opinion that this conversation did not amount to a contract, and it pointed out that even if it did it would not help the defendant, because the charge was satisfactory to the defendant's family physician and to the plaintiff, and the patient had expressed no dissatisfaction with it. The defendant certainly could not claim the right alone to fix the plaintiff's compensation. In further support of his appeal, the defendant claimed that a physician could not charge what was admittedly more than his own customary charge for the particular service; that what other surgeons would have charged, or thought proper, was immaterial. This, said the court, was a somewhat novel and startling proposition as to the fees of professional men. It would mean that a physician, once having fixed his fee for a given service, could never increase it. "We would hesitate long," said the court, "before subscribing to such a rule, particularly in view of the services rendered by physicians to the afflicted without thought of compensation, customary or otherwise, of which plaintiff's own experiences are, we think, a fair sample." The plaintiff had testified that he had during twenty years' experience in surgery performed six times the operation that he had performed on the patient in this case, and did three of those operations without compensation. Continuing, the court said:

> This state of affairs the law must recognize, that physicians should not have their services valued, as you would commodities in trade, by a fixed standard; what would be a proper charge for the same service to one man fully able to pay would be excessive to the man of limited means, and what would be willingly done for the indigent, without thought of financial reward, should be compensated for by one who can afford to pay on the scale which doctors of repute measure as the proper one. Only on such a basis can those who devote their lives to ministering to human suffering in some degree be fairly paid. *Succession of Levitan*, 143 La. 1025, 79 So. 829, 3 A. L. R. 1646, *Young Bros.* v. *Succession of Von Schoeler*, 151 La. 73, 91 So. 551. As was said in the Levitan case: "It is a matter of common information that physicians and surgeons do not regulate their charges by any fixed standard of pecuniary value, but, to a certain extent, base them on the ability of the patient to pay, and, on that basis, more frequently than otherwise, perhaps, are but poorly compensated."

The judgment of the court below in favor of the plaintiff for $3,000, with interest, was affirmed.

Roentgen Burns as Evidence of Negligence

(Ragin v. Zimmerman (Calif.), 276 P. 107)

A nurse employed by the defendant, Zimmerman, a dentist, tried to take a roentgenogram of the plaintiff's chin. The plaintiff was electrically shocked and burned in the process. From a judgment in his patient's favor, Zimmerman appealed to the supreme court of California. In his appeal, he assumed that the doctrine of res ipsa loquitur had been applied in reaching a verdict against him, and he combated the application of it to malpractice cases. The supreme court found nothing in the record to indicate that the trial court was influenced by that doctrine, but it did find that the cases cited by the defendant to show that the doctrine is not applicable in malpractice cases brought against physicians, surgeons and dentists for errors in the treatment of disease had no application in the present case, because the appellant was not employing the roentgen rays for treatment when his patient was injured. While the supreme court found no reason for applying the doctrine in the present case, the court would not hesitate, it said, to apply it to the facts described by the evidence if there were occasion for doing so. It quoted with approval *Evans* v. *Clapp* (Mo. App.) 231 S. W. 179 as follows:

> As hereinbefore stated, the x-ray was not applied in this case for purposes of treatment, but merely to ascertain the cause of plaintiff's headaches, and this was disclosed at the first examination. There is no room, therefore, for the application of any theory of mere honest mistake in the careful application of a treatment intended to be applied in the accomplishment of a result similar to the one produced but not to the extent thereof. On the contrary, the x-ray was to be used only to discover a condition which was at once shown, and the many other exposures were not made in the interest of the patient but for other purposes. Examinations, when carefully and properly made, do not produce burns; hence when a burn is produced, this fact is of itself some evidence from which the jury may find that the degree of care and skill ordinarily exercised by persons of like profession and using such agencies was not exercised in that particular case. *George* v. *Shannon*, 92 Kan. 801, 808, 142 P. 967, Ann. Cas. 1916B, 338; *Shockley* v. *Tucker*, 127 Iowa 456, 103 N. W. 360.

The judgment of the trial court in favor of the injured patient was therefore affirmed.

Society Proceedings

COMING MEETINGS

American Academy of Physical Therapy, Philadelphia, December 5-6. Dr. Thomas L. Smyth, 111 North Eighth Street, Allentown, Pa., Sec'y.
Radiological Society of North America, Toronto, December 2-6. Dr. I. S. Trostler, 25 East Washington Street, Chicago, Acting Secretary.
Society of American Bacteriologists, Ames, Iowa, December 30-January 1. Dr. James M. Sherman, Cornell University, Ithaca, N. Y., Secretary.
Southern Surgical Association, Atlanta, Ga., December 10-12. Dr. Robert L. Payne, 142 York Street, Norfolk, Va., Secretary.
Western Surgical Association, Del Monte, Calif., December 12-14. Dr. Frank R. Teachenor, 306 E. Twelfth St., Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. of Obstet. & Gynecology, St. Louis

18: 449-602 (Oct.) 1929

Pathologic Diagnosis of Early Cervical and Corporeal Cancer: Differentiation from Pseudomalignant Inflammatory Lesions. E. Novak, Baltimore.—p. 449.
*Leukoplakic Vulvitis and Cancer of Vulva. F. J. Taussig, St. Louis.—p. 472.
Clinical and Anatomic Description of a Naegele Pelvis. J. W. Williams, Baltimore.—p. 504.
*Conservative Treatment of Eclampsia. O. H. Schwarz and W. J. Dieckmann, St. Louis.—p. 515.
Kidney of Pregnancy. J. C. Hirst, Philadelphia.—p. 528.
Significance of Low Arterial Pressure in Pregnancy. P. F. Williams, Philadelphia.—p. 546.
Basal Metabolism Studies in Normal Pregnant Women with Normal and Pathologic Thyroids. E. D. Plass, Iowa City, and W. A. Yoakam, Detroit.—p. 556.
Hookworm Disease and Pregnancy. E. L. King, New Orleans.—p. 569.
Trichomonas Vaginalis Donné. C. H. Davis, Milwaukee.—p. 575.
Temporary Roentgen Castration in Treatment of Subacute Adnexal Inflammation. J. O. Polak, New York.—p. 580.
Acute Puerperal Inversion of Uterus. P. Findley, Omaha.—p. 587.
Cancer of Cervix Complicating Pregnancy. J. A. McGlinn, Philadelphia.—p. 592.
Study of Two Hundred Autopsies Made on Syphilitic Fetuses. J. R. McCord, Atlanta, Ga.—p. 597.

Leukoplakic Vulvitis and Cancer of Vulva.—Of the seventy-six cases reviewed by Taussig, about 60 per cent were operable. A division of the cases according to the histologic malignancy index showed that this corresponded closely with the extent of the clinical involvement. It also showed that the cancers on a leukoplakic basis were relatively benign, whereas those springing from syphilitic ulcers were malignant. The treatment of cancer of the vulva by radiotherapy has been unsuccessful. Burns readily occur and retrogressions are few and temporary. Surgery is alone to be considered unless the patient's condition makes this impossible. Simple vulvectomies or superficial or one-sided gland dissections meet with a high percentage of recurrences. The double-sided Basset technic of gland removal together with vulvectomy is a safe operation followed by a high percentage of five-year cures, 81.8 per cent in Taussig's series. Two cases with gland metastasis are among these cures. The vulvectomy must be complete in every leukoplakic case, since a new cancer may arise years later from a remaining island of leukoplakic skin.

Conservative Treatment of Eclampsia.—Schwarz and Dieckmann summarize their treatment of eclampsia as follows: Magnesium sulphate, in 25 per cent solution, is given intramuscularly to control convulsions. On admission they inject 10 cc. and give 5 cc. after each convulsion until controlled. In coma no magnesium sulphate is used. If given intravenously it does decrease intracranial pressure, but its depressant action on the respiration and the heart are so marked that they contraindicate its use. Believing that absorption from the alimentary tract is an important factor, they give a colonic irrigation and in addition usually wash out the stomach and leave 60 cc. of a saturated solution of magnesium sulphate in it. Next, they inject 1,000 cc. of a 20 per cent solution of dextrose intravenously over a period of from thirty to fifty minutes, two, three or even four times daily, depending on the severity of the case. Usually after twenty-four hours the stomach will empty itself, as evidenced by failure to recover injected solution, and then they inject 5 per cent Karo syrup water beginning with 50 cc. and increasing hourly up to the patient's tolerance, which may be as much as 300 cc. an hour. This is continued until the patient is conscious and able to take an eclamptic diet, which consists of fruit and fruit juices.

American J. Psychiatry, Baltimore

9: 231-460 (Sept.) 1929

*Eight Years of Clinical and Educational Work in Community. J. A. Jackson and H. V. Pike, Danville, Pa.—p. 231.
*Observations on Experimentally Produced Convulsions. F. H. Pike, C. A. Elsberg, W. S. McCulloch and A. Rizzolo, New York.—p. 259.
Relation of Endocrinopathic States to Conduct Disorders of Children. L. A. Lurie, Cincinnati.—p. 285.
Functional Psychoses in Childhood. J. Kasanin and M. R. Kaufman, Boston.—p. 307.

Eight Years of Clinical and Educational Work in Community.—Jackson and Pike urge that every state hospital for mental diseases should assume a certain degree of responsibility in the development of a program of mental hygiene in its respective hospital district. Such a program to be well balanced should provide both educational and clinical extrahospital activities, and the educational program should be as carefully planned and systematically carried out as are the clinical activities. The immediate supervision of all extrahospital activities should be in the hands of one man, if possible a clinical director, who should be capable of carrying out the policies of the hospital administrator and to whom alone he should be responsible for his work. In view of the fact that approximately 40 per cent of the children seen at mental clinics present conditions that are susceptible of being handled by the school physician, school nurse and teachers, there should be associated with state departments of education neuropsychiatrists who could provide educational and clinical instruction for such physicians and teachers, and arrange for the examination and guidance of this group of children, especially in those districts that are difficult of access to individual hospitals and state supervising departments of the state hospital system. The study of the child of preschool age should be stressed with a view to correction of faulty habit formation in the early years of life and in this phase of the clinical work will be found a useful field of activity. Many of these patients when understood and properly handled can be helped to good social adjustments. Of 4,091 cases examined by the author in only 20 per cent was commitment to state hospitals or correctional institutions deemed necessary. The authors feel that the future of mental medicine lies in educational and clinical methods directed toward prevention.

Experimentally Produced Convulsions.—For the past few years much experimental research has been made by Pike et al. This has been directed along four main lines: (1) the problems of localization; (2) the duplication of as many of the observed phenomena of epileptic convulsions, as these are encountered clinically, as is possible by experimental means; (3) the problem of etiology and pathogenesis, and (4) the search for the conditions determining the duration of the attack as it is seen clinically. On the basis of the evidence obtained so far, Pike et al. conclude that: 1. Clonic convulsions arise from the motor cortex when this is anatomically and functionally intact. 2. Tonic convulsions arise from the lower motor mechanisms in the period immediately succeeding an injury to the cortical motor mechanisms. After the lapse of sufficient time, clonic responses may be elicited from them. But this is not evidence that clonic convulsions may and do arise from the lower motor mechanisms when the cortical mechanisms are intact. 3. Clonic convulsions in children may arise from the lower motor mechanisms before the fibers of the pyramidal system have become myelinated and functionally active. 4. All parts of the motor mechanism act together as one mechanism when the brain is intact, as Jackson believed. It does not seem probable that one part of the mechanism gives rise to movements of one type, and some other part of the mechanism independently gives rise to movements of another type, when the whole motor system is intact.

American J. Surgery, New York

7: 451-596 (Oct.) 1929

Experimentally Produced Peptic Ulcer. F. C. Mann, Rochester, Minn.—p. 453.
Hormone Mechanism for Gallbladder Contraction and Evacuation. A. C. Ivy, Chicago.—p. 455.
Surgical Aspects of Gastro-Enterology. D. C. Balfour, Rochester, Minn.—p. 460.
Rôle of Liver and Gallbladder in Mortality and Morbidity of Gallbladder Disease. J. B. Deaver, Philadelphia.—p. 463.

Effect of Heat and Cold on Splanchnic Organs. F. E. Muller, Hamburg, Germany, and L. Kast, New York.—p. 467.
Are Diagnoses of Enteroptosis, Gastroptosis and Coloptosis Now Justifiable? R. O. Moody, Berkeley, Calif.—p. 470.
Pain Sensibility: Variable Human Factor. B. B. Crohn, New York.—p. 474.
Enzymatic Activities of Duodenal Contents. J. V. Wadsworth and A. H. Aaron, Buffalo.—p. 480.
Behavior Patterns of Alimentary Tract. T. W. Todd, Cleveland.—p. 487.
Gastric Response to Tobacco Smoking. I. Gray, New York.—p. 489.
Gastric Secretion After Partial Gastrectomy for Ulcer. A. Winkelstein, New York.—p. 494.
Acidity of Gastric Juice. B. P. Babkin, Montreal, Canada.—p. 498.
Phenomena Including Recurrent Ulcer Following Resection of Benign Lesions. J. F. Weir, Rochester, Minn.—p. 505.
Motor Phenomena in Gastric Antrum and Duodenum: Importance in Mechanism of Duodenal Regurgitation. M. E. Rehfuss and J. Eads, Philadelphia.—p. 516.
Visualization of Hepatic Ducts and Common Duct with Choledochus Stasis. W. A. Swalm and W. F. Manges, Philadelphia.—p. 521.
Cholestatic Vertigo. C. W. Lueders, Philadelphia.—p. 526.
Gastric Ulcer: Results of Operation for Corporic Ulcer. L. G. Cole, New York.—p. 536.
Gastro-Intestinal Knick-Knacks. H. J. Bartle, Philadelphia.—p. 557.
Colon in Relation to Chronic Arthritis. E. C. Fishbaugh, Los Angeles.—p. 561.
Personality Changes in Children and Adolescents. J. W. Draper and R. K. Johnson, New York.—p. 568.
Peptic Ulcer with Hiccup. J. P. Sawyer, Cleveland.—p. 573.

American Review Tuberculosis, Baltimore

20: 413-636 (Oct.) 1929

Tuberculosis in Public School Children. E. L. Opie, H. R. M. Landis, F. M. McPhedran and H. W. Hetherington, Philadelphia.—p. 413.
*Survey to Determine Prevalence of Tuberculous Infection in School Children. H. W. Hetherington, F. M. McPhedran, H. R. M. Landis and E. L. Opie, Philadelphia.—p. 421.
*Open-Air Schools for Treatment of Tuberculous Children. H. W. Hetherington, Philadelphia.—p. 511.
Diagnosis and Classification of Pulmonary Tuberculosis in Childhood and Adolescence. F. M. McPhedran, Philadelphia.—p. 532.

Prevalence of Tuberculous Infection in School Children.—From this lengthy report on several years of work done by Hetherington et al., only a few points can be excerpted because of space curtailment. Tuberculin tests of school children of Philadelphia show that 37.7 per cent are infected with tuberculosis at the age of 5 years and 90.2 per cent at the age of 18 years. The intracutaneous tuberculin test is the only accurate method of determining the incidence of tuberculous infection in apparently healthy children. American-born children of Italian parentage have shown a low incidence of tuberculous infection, as indicated by the tuberculin test. In Jewish children the incidence of the positive reaction has been approximately the same as that of other children. Pulmonary tuberculosis, recognized by roentgenologic examination in association with symptoms and physical signs, is found in 0.5 per cent of children attending school, being more frequent in high school children than in children of elementary schools. Latent apical tuberculosis recognizable in roentgenologic films is often the precursor of the adult type of pulmonary tuberculosis. It is found in 1 per cent of adolescent children (of high school age) and is more frequent in girls than in boys. Latent tuberculous infiltration of the lung of childhood type was found in more than 1 per cent of school children. Latent tuberculous foci in the lungs and the tracheobronchial lymph nodes are found in more than 10 per cent of the school children. Pulmonary tuberculosis recognized by roentgenologic examination together with symptoms and physical signs is found more than twice as often in adolescent girls as in boys of the same age. The evidence obtained suggests that tuberculous infection may spread within schools but that under the existing system of medical school inspection this seldom occurs.

Open-Air Schools for Treatment of Tuberculous Children.—Hetherington asserts that the usual clinical examination is not adapted to discover children who need protection against tuberculosis since it reveals only manifest disease that usually requires sanatorium treatment or its equivalent. Most of those in elementary schools who need protection against tuberculosis, such as may be afforded by open-air schools or preventoriums, can be selected by applying tuberculin tests and roentgenologic examinations to children between 5 and 12 years of age who are known to be in contact with open tuberculosis, for a large part (at least one fourth) of the children exposed to open tuberculosis at home have advanced latent lesions. Open-window classes should be established in elementary schools so that children with latent tuberculosis can receive the benefit of prophylactic treatment without going long distances from home. A small percentage of high school children, at least 0.6, from 12 to 18 years of age have tuberculosis so far advanced that sanatorium care is required, and a somewhat larger percentage, approximately 2.0, have grave latent tuberculosis that threatens to develop into clinical and perhaps fatal disease. The application of the tuberculin test and roentgenologic examination to high school children is a practicable means of selecting those who have tuberculosis and others who are liable to develop it. Provision should be made in the high schools for the prophylactic care of children who have advanced latent tuberculous infection that has not impaired their health; this may be accomplished by a modified school regimen that will avoid mental and physical fatigue and will provide adequate rest and nourishment.

Annals of Internal Medicine, Ann Arbor, Mich.

3: 295-402 (Oct.) 1929

Serums and Vaccines in Prevention and Treatment of Disease. B. White, Boston.—p. 309.
*Diagnosis of Gonococcal Arthritis: Three Cases in Patients with Chronic Rheumatic Endocarditis. O. H. P. Pepper, Philadelphia.—p. 328.
*Complications and Sequelae of Chronic Ulcerative Colitis. J. A. Bargen, Rochester, Minn.—p. 335.
Atypical Clinical Forms of Trichiniasis. L. A. Conner, New York.—p. 353.
Relation of Psychiatry to Medicine. A. F. Riggs, Stockbridge, Mass.—p. 360.
Psychiatry's Part in Preventive Medicine. A. H. Ruggles, Providence, R. I.—p. 366.
Relation of Streptococci to Influenza. S. S. Altshuler and L. D. Henry, Ann Arbor, Mich.—p. 371.
*Lead Poisoning from Partaking of Snuff. R. J. Reitzel, Galveston, Texas.—p. 378.

Diagnosis of Gonococcal Arthritis.—Each of three cases reported by Pepper presented gonococcal arthritis associated with an old rheumatic endocarditis. All of these patients have been followed sufficiently long to exclude all reasonable possibility of cardiac lesions being gonococcal in nature nor did they present in the hospital the evidence of this infection. They are unquestionably instances of rheumatic heart disease. The absence of earlier rheumatic arthritis is interesting in that in its absence the joints would perhaps not have been expected to be peculiarly susceptible to later gonococcal arthritis. It is suggested that a gonococcal focal infection may cause either a specific gonococcal arthritis or a nonspecific infectious arthritis. There is some reason to believe that rheumatic infection prepares the soil not only for recurrences of rheumatic fever but also for other types of arthritis including the gonococcal.

Complications and Sequelae of Chronic Ulcerative Colitis.—Bargen tabulates 268 complications occurring in 693 cases of chronic ulcerative colitis. Multiple polyposis occurred as the most common complication (sixty-nine cases). Rectal stricture came second (fifty-nine cases), arthritis third (thirty cases) and perirectal abscess fourth (twenty-six cases) in frequency. In twenty-five cases there were symptoms of neurologic phenomena. There were five cases of pregnancy during the course of the disease in which symptoms improved or completely disappeared during the pregnancy; in four cases lymphosarcoma occurred in the colon; there were two cases of lymphatic leukemia, and one case of pericolic lipomatosis. There were four cases in which various types of abdominal surgical procedures precipitated acute attacks of ulcerative colitis which proved fatal to the patients. There were only five instances in which the disease occurred in more than one member of a family. Those affected in groups were two sisters, two brothers, a father and his daughter, and in two instances a mother and her son. Such an incidence could occur readily in any infection and would argue against the idea that the disease might be contagious. Eleven cases are reported in detail.

Lead Poisoning from Snuff.—During the past year and a half Reitzel has seen four cases of lead poisoning from snuff. Analyses of the snuff, feces and urine of these patients showed lead. The patients all used the same brand of snuff. The samples examined were marketed in glass jars.

Archives of Ophthalmology, Chicago

2: 387-520 (Oct.) 1929

International Congress of Ophthalmology. G. S. Derby, Boston.—p. 387.
Intracranial Aneurysms: Rôle in Production of Ocular Palsies. A. O. Pfingst and R. G. Spurling, Louisville, Ky.—p. 391.
Does Keratomalacia Exist in Adults? A. Pillat, Peiping, China.—p. 399. (C'cn. from page 287.)
Oculoglandular Form of Tularemia. D. T. Vail, Jr., Cincinnati.—p. 416.
Glutathione in Crystalline Lens. I. S. Tassman and W. G. Karr, Philadelphia.—p. 431.
Hereditary Nystagmus: Case. W. S. Knighton, New York.—p. 437.
Dermatoses of Region of Eye. C. M. Williams, New York.—p. 443.
Retinochoroiditis Juxtapapillaris—Jensen. S. V. Abraham, Chicago.—p. 452.
Relationship of Flavobacterium Ophthalmiae to Periodic Ophthalmia in Horses. A. C. Woods and E. L. Burky, Baltimore.—p. 456.

Archives of Otolaryngology, Chicago

10: 337-446 (Oct.) 1929

*Neurologic Aspects of Nasal Sinus Infections. S. L. Ruskin, New York.—p. 337.
*Vincent's Organisms: Case. D. P. Seecof, Denver.—p. 384.
Primary Congenital Cholesteatoma of Temporal Bone. W. E. Grove, Milwaukee.—p. 398.
Esophagoscopic Study of Esophageal Varices. J. S. Moyer, Philadelphia.—p. 409.
Irrigating Cannula-Rasp for Maxillary Sinusitis. D. M. Butler, Boston.—p. 420.
New Operating Attachment for Catheterizing Eustachian Tube. R. M. Colbert, New York.—p. 421.
Occurrence of Lung Abscess Following Operations on Tonsils: Two Cases. M. N. Kleinert, Boston.—p. 423.
Plastic Surgery. J. E. Sheehan, New York.—p. 426.

Neurologic Aspects of Nasal Sinus Infections.—On the basis of prolonged and thorough study of head specimens, Ruskin concludes that headaches and systemic disturbances are produced not only by suppurative conditions of the nasal sinuses but also by the irritation of the various nerve tracts long after the suppuration has run its course and stopped. In these cases the inflammation has left a thickened mucous membrane which acts as a source of irritation to the nerve fibers supplying it. The roentgen rays show these conditions clearly. Therapeutically, the cases are nonsurgical and the patients receive little care. By treatment of the nasal ganglion the nerve pathway is intercepted between the irritated mucosa and the nervous system, and thus the patient is freed from headaches and systemic disturbances. Once the nerve pathways are blocked, the thickened sinus membrane is of no further consequence to the patient. Therefore, there is a rational treatment for the nonsuppurative sinus disturbances.

Sinusitis and Fatal Meningitis Due to Vincent's Spirillum.—A case is reported by Seecof in which death occurred four days after the onset of symptoms of orbital and meningeal complications due to the extension of infection from the accessory nasal sinuses. Necropsy revealed chronic infection of the frontal, ethmoid and sphenoid sinuses; osteomyelitis of the frontal bone; cellulitis of the left orbit; localized meningitis, and pulmonary gangrene. In all these locations, Vincent's organisms were present in association with other bacteria. The intracranial lesions appear to have resulted from the spreading of the infection in the sinuses through the diploe of the frontal bone, and the pulmonary lesion from aspiration of it from the throat.

Archives of Pathology, Chicago

8: 575-734 (Oct.) 1929

*Interpretation of Malignant Growth Based on Chemistry of Cell Division. F. S. Hammett, Philadelphia.—p. 575.
Pleural and Pulmonary Lesions in Twenty-Eight Fatal Cases of Active Rheumatic Fever. W. U. McClenahan and J. R. Paul, Philadelphia.—p. 595.
*Congenital Stenosis of Third Portion of Duodenum with Acute Occlusion and Rupture of Stomach. P. R. Cannon and B. Halpert, Chicago.—p. 611.
Repeated Exposure to High Temperature. O. R. Caillet and J. P. Simonds, Chicago.—p. 622.
Iron-Incrusted Fiber Inclusions of Giant Cells. E. F. Hirsch and D. D'Andrea, Chicago.—p. 628.
Anaphylactic Crossed Relationship Between Horse Dander and Horse Serum. B. Ratner and H. L. Gruehl, New York.—p. 635.
Reticulo-Endothelial System of Rabbit. R. H. Mole, Liverpool, England.—p. 645.
*Development of a Carcinoma of Breast: Case. H. Ingleby, Philadelphia.—p. 653.
*Presumptive Kahn Procedure in Syphilis Based on 15,000 Examinations. E. B. McDermott, Ann Arbor.—p. 661.
Aschoff Nodule. B. J. Clawson, Minneapolis.—p. 664.

Interpretation of Malignant Growth Based on Chemistry of Cell Division.—Hammett's study was based on the biologic principle that any satisfactory interpretation of malignant growths must be founded on a knowledge of the chemical stimulus to growth by increase in cell number. The first step was a description of the experimental work leading to a demonstration that the sulphydryl group is the essential stimulus to multiplication of cells in healthy material. The next step was an examination of the available reports with respect to sulphur metabolism in general and sulphydryl in particular in tumor-bearing persons and tumor tissue. The third step was an examination of the etiologic concepts of malignancy for the purpose of seing whether or not they could be lined up on a common basis. The chief manifestations of malignant conditions were also tested against this concept and found to be sustaining. From all this the generalization has developed that the potentiality for malignancy lies in the hereditary determination of lines of cells retaining the embryonic characteristic of a heightened sensitivity to the essential stimulus to proliferation of cells, sulphydryl, and that the development of malignancy depends on the presentation to the potentially tumor-producing cells of an adequate concentration of this chemical group.

Congenital Stenosis of Third Portion of Duodenum with Acute Occlusion and Rupture of Stomach.—Cannon and Halpert present the clinical history and observations at necropsy of a girl, aged 8, with chronic intermittent high intestinal obstruction, acute occlusion of the duodenum and rupture of the stomach. At about the level of the papilla of Vater, a membranous septum with a small iris-like aperture narrowed the lumen of the bowel. The dome of the bulging septum extended to the point at which the mesentery crossed the inferior horizontal portion of the duodenum. The marked hypertrophy of the wall of the duodenum oral to the septum, and that of the stomach, as well, indicated that the site of chronic obstruction was at this point. The acute occlusion was apparently caused by a plugging of the aperture in the septum by coarse food, aided by the mechanical hindrance offered by the crossing of the mesentery. The overadministration of enemas in an attempt to relieve the symptoms of an acute obstruction led, by overdistention and increased motor activity, to rupture of the stomach. The reports of similar cases are reviewed.

Development of a Carcinoma of Breast.—A tumor of the breast is described by Ingleby in which two varieties of carcinoma cells are found: (1) cells of the primary growth situated in the ducts, and (2) epithelial cells of the lobules, which have become carcinomatous. The transition of the normal cells of the ductules (and acini) into carcinoma cells is described and figured.

Presumptive Kahn Procedure in Syphilis Based on 15,000 Examinations.—A study was made by McDermott of the sensitiveness of the presumptive procedure in comparison with the regular Kahn test, based on 15,277 examinations. It was found that in the general run of hospital cases the presumptive procedure was positive in 2.5 per cent more cases than the regular test. In a group of 150 cases in which the patients were being treated for syphilis, this procedure was positive in 26 per cent more cases than the regular test. In view of the fact that the number of false positive reactions obtained with the presumptive procedure is relatively small, the increase in sensitiveness of this procedure over the regular test renders it an important supplementary method in the Kahn reaction.

Archives of Physical Therapy, X-Ray, Radium, Omaha

10: 433-479 (Oct.) 1929

Evolutionary Modifications of Tonsillor-Electro-Enucleation. F. P. Herman, Cleveland and Palm Beach, Fla.—p. 433.
Cautery Punch Operations. J. R. Caulk, St. Louis.—p. 437.
Physical Therapy in Thoracic Surgery. R. B. Bettman, Chicago.—p. 444.
Inner Development of Roentgenology. G. Holzknecht, Vienna, Austria.—p. 448.
Electrotherapy in Otolaryngology. J. H. Hester, Louisville, Ky.—p. 452.
Roentgen Treatment of Superficial Neoplasms. W. E. Pennington, Indianapolis.—p. 457.

Archives of Surgery, Chicago

19: 771-942 (Nov.) 1929

Correlations of Internal and External Pancreatic Secretion: I. General Considerations and Review of Literature. G. de Takáts, Chicago.—p. 771.
Id.: II. Histologic Changes in Isolated Tail of Pancreas. G. de Takáts, Chicago.—p. 775.
Id.: III. Effect of Ligation of Tail of Pancreas on Diastase in Blood. G. de Takáts and I. T. Nathanson, Chicago.—p. 788.
*Experimental Sarcoma of Bone. C. L. Connor, San Francisco.—p. 794.
Pulmonary Atelectasis and Respiratory Failure. I. Rappaport, New York.—p. 808.
Cavernous Hemangioma of Scrotum: Case. N. Winslow, Baltimore.—p. 829.
*Surgical Wounds in Human Beings: I. Epithelial Healing. S. W. Hartwell, Rochester, Minn.—p. 835.
Primary Carcinoma of Fallopian Tube: Fourteen Cases. L. R. Wharton, Baltimore, and F. H. Krock, Fort Smith, Ark.—p. 848.
Leukoplakia of Renal Pelvis. A. A. Kutzmann, Los Angeles.—p. 871.
Oxygen Content of Blood in Patients with Varicose Veins. A. Blalock, Nashville, Tenn.—p. 898.
*Carcinoma of Colon. F. W. Rankin and J. A. Bargen, Rochester, Minn.—p. 906.
Acute Obstruction of Small Intestine Due to Gallstone. G. L. McWhorter, Chicago.—p. 915.
Review of Urologic Surgery. A. J. Scholl and A. A. Kutzmann, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; G. S. Foulds, Toronto, Canada, and J. Verbrugge, Antwerp, Belgium.—p. 922.

Experimental Sarcoma of Bone.—A spontaneous transmissible endothelioma of the chicken was introduced by Connor into the marrow cavity of the tibia of the chicken for the purpose of duplicating, if possible, a tumor similar to that described by Ewing as an endothelial myeloma, and in order to watch the development and manner of growth of such a tumor. The resultant tumor resembled, in some respects, both endothelioma and osteogenic sarcoma as seen in man. Like endothelioma, it occupied a large part of the shaft and was osteolytic until it had penetrated by way of the nutrient foramen or through the cortical spicules to the subperiosteal space. While confined between the periosteum and the cortex, the tumor cells formed radiating spicules of bone. In a similar experiment with the Rous fibrosarcoma, it too formed bone beneath the periosteum. Fully two thirds of the course of the tumor had been run before the tumor became palpable or visible by the roentgen rays, although it was present in all the bones examined on the fourth day. By the twenty-second day, the chickens had died with widespread metastases. Two died of metastases before a tumor could be demonstrated by palpation or by the roentgen rays, although tumors were present in both cases. It is shown that both endothelial (or reticular) cells and fibroblasts are capable of differentiating into osteoblasts under certain physical and chemical conditions.

Surgical Wounds in Human Beings: Epithelial Healing.—Hartwell's studies showed that in the healing of wounds covering with epithelium takes place through the ameboid movement into the wound of cells from the surrounding epithelium. Such moving cells form an "extension membrane." The process of covering with epithelium is completed by the union of two such membranes from opposite sides of the wound, followed by the rearrangement and multiplication of the cells of the membrane. Mitosis occurs secondarily to cellular movement and late in the process of healing. The majority of the cells which form the extension membrane are derived from the prickle cell layer of the old epithelium. A basal cell layer is formed under the epithelial outgrowth by a rounding up and alinement of the lowermost cells of the membrane, rather than by outgrowth of cells from the old basal layer. The prickle cell of the normal epithelium is therefore capable of becoming the basal cell in the epithelium of the scar and must be considered the primary cell in the regeneration of epithelium in the healing of wounds. The formation of the healing epithelial membrane is dependent on a supporting base suitable for the movement of epithelial cells. The base available for the support and advance of the epithelial membrane is the chief factor determining the time and place of the union of the epithelium from the two sides of the wound. The rate of cornification of cells of the membrane is also a determining factor in the rate of the process of covering with epithelium. The chief causes of delayed epithelial healing, therefore, are the existence of a supporting wound surface unsuitable for progression of epithelial cells, and rapid cornification of the cells of the membrane due to inimical chemical or physical environment. The conditions just named are accentuated in infected wounds. Any beneficial effect of a particular method of dressing wounds may be referred to its action toward producing a more suitable base or more suitable environment in which the epithelial cells may grow out normally.

Carcinoma of Colon.—Intraperitoneal vaccination with colon bacilli and streptococci, as an adjunct to other preoperative measures, seems a valuable asset in the treatment of patients with malignant growths of colon. In a series of sixty cases reported by Rankin and Bargen, there was a definite lowering of mortality from peritonitis. Postoperative convalescence was noticeably smoother than in the similar group of cases used as controls. The value of cooperative management in these cases is well established, and selection of patients for operation, of types of operation for individual patients and of methods of anesthesia are important factors in the surgical treatment of malignant conditions of the colon.

Arkansas M. Soc. Journal, Little Rock

26: 95-113 (Oct.) 1929

Value of Roentgen Examination of Gastro-Intestinal Tract. W. R. Brooksher, Jr., Fort Smith.—p. 95.
Management of Duodenal Ulcer. H. W. Hundling, Little Rock.—p. 97.
Mucous Colitis. H. E. Murry, Texarkana.—p. 100.

Association Amer. M. Colleges Journal, Chicago

4: 289-352 (Oct.) 1929

Teaching of Physiology. M. H. Fischer, Cincinnati.—p. 289.
Teaching of Elementary Pathology. R. S. Austin, Cincinnati.—p. 296.
Tennessee Four-Quarter Plan. O. W. Hyman, Memphis, Tenn.—p. 300.
Quarter System at Minnesota. E. P. Lyon, Minneapolis.—p. 308.
Teaching of Pharmacology. M. L. Bonar, Morgantown, W. Va.—p. 313.
Honor System in Medical School. I. E. Wallin, Denver.—p. 317.
Adaptation of Medical Education to Needs of Individual Student. W. H. MacCraken, Detroit.—p. 321.

Colorado Medicine, Denver

26: 327-354 (Oct.) 1929

Some Fallacies in Modern Medicine. W. Senger, Pueblo.—p. 331.
What is Epilepsy? A. C. McClanahan, Delta.—p. 335.
Marriage, Divorce and Doctor. J. R. Earp, Denver.—p. 339.

Indiana State M. Assn. Journal, Fort Wayne

22: 421-464 (Oct. 15) 1929

High Peaks of Medical History. C. E. Gillespie, Seymour.—p. 421.
Modern Methods of Preoperative and Postoperative Treatment. J. S. Horsley, Richmond, Va.—p. 424.
*Value of Fahraeus Reaction in Gynecology. J. H. Weinstein, Terre Haute.—p. 427.
*Place of Laboratory Methods in Diagnosis and Prognosis of Pulmonary Tuberculosis. J. Wynn, Indianapolis.—p. 433.
*Pyelitis in Infants and Children. I. Cole, New Richmond.—p. 437.

Value of Fahraeus Reaction in Gynecology.—Weinstein concludes from his personal experience that the sedimentation rate is the most constantly accurate aid in determining the safe time for operation in pelvic infection. A sedimentation rate of less than sixty minutes is indicative of active infection. A sedimentation rate of 120 minutes or more precludes the probability of infection.

Place of Laboratory Methods in Diagnosis and Prognosis of Pulmonary Tuberculosis.—The technic of blood sedimentation determinations and the serial study of the blood leukocytes are outlined by Wynn, and the usefulness of each in judging clinical progress is emphasized. It is pointed out that the week to week counts of all the leukocytes (including the percentage of unsegmentally nucleated polymorphonuclears) may enable one to construct simple curves which give real prognostic information. The construction and analysis of these curves is outlined.

Pyelitis in Infants and Children.—That pyelitis is so frequently overlooked in infants and young children, Cole says, is due to one of the three following reasons: the indifference to the necessity of a routine examination of the urine in all acutely sick infants; the difficulty often experienced in securing urine specimens in infancy, and the absence of any sign or symptom pointing to the urinary tract as the source of the trouble. Consequently, in every case of obscure fever in an infant or an older child, at least a microscopic examination of the urine should be made.

Journal of Clin. Investigation, Baltimore

7: 527-642 (Oct. 20) 1929

Influence of Sympathetic Nervous System on Capillaries During Passive Congestion. J. H. Crawford, New York.—p. 527.
*Excretion of Zinc in Health and Disease. L. T. Fairhall and L. H. Hoyt, Boston.—p. 537.
Skin Reactions to Filtrates of Hemolytic Streptococci in Acute and Subacute Nephritis. O. C. Hansen-Pruss, W. T. Longcope and D. P. O'Brien, Baltimore.—p. 543.
Color of Skin as Analyzed by Spectrophotometric Methods: I. Apparatus and Procedures. C. Sheard and L. A. Brunsting, Rochester, Minn. —p. 559.
Id.: Rôle of Pigmentation. L. A. Brunsting and C. Sheard, Rochester, Minn.—p. 575.
Id.: Rôle of Superficial Blood. L. A. Brunsting and C. Sheard, Rochester, Minn.—p. 593.
Studies on Red Blood Cell Diameter: III. Relative Diameter of Immature (Reticulocytes) and Adult Red Blood Cells in Health and Anemia, Especially in Pernicious Anemia. E. L. Persons, Boston. —p. 615.
Id.: IV. Decrease in Mean Diameter of Reticulocytes and Adult Red Blood Cells in Pernicious Anemia Following Liver Therapy. G. Fitzhugh and E. L. Persons, Boston.—p. 631.

Excretion of Zinc in Health and Disease.—An investigation made by Fairhall and Hoyt of the urinary zinc excretion of twenty-four healthy individuals and of forty-one hospital patients showed that while no constant relation could be discovered between zinc output and the degree of anemia, or alteration in hemoglobin, blood cell count, urinary albumin or edema, the zinc output is somewhat different in nephritis and markedly accentuated in uremia and tuberculosis.

Journal of Lab. & Clin. Medicine, St. Louis

15: 1-108 (Oct.) 1929

*Tubercle Bacilli and Elastic Tissue Fibers in Sputum of Different Types of Phthisis. I. Rappaport, New York.—p. 1.
*Incidence of Bacteria in Sputum Cultures from Fifty Patients Having Asthmatic Bronchitis. M. J. McKinney, Chicago.—p. 6.
Basal Urea Elimination. C. Richet, Jr., Paris, France.—p. 9.
*Uric Acid Increase in Blood of Patients with Cardiac Decompensation. J. L. Williams, Chicago.—p. 13.
*Experimental Elimination of Adhesions Caused by Intraperitoneal Injection of Neoarsphenamine. B. E. Noble, Chicago.—p. 17.
*Effect of Lead on Rat Sarcoma. J. S. Buck and D. M. Kumro, Durham, N. C.—p. 24.
*Sensitivity of Kolmer and Kahn Tests During Chill and Fever. J. H. Besancon and V. R. Mayer, Philadelphia.—p. 25.
*Toxins, Antitoxins and Dermagens. L. G. Hadjopoulos and R. Burbank, New York.—p. 30.
Toxicity of Strontium and Comparison with Other Cations Employed in Therapeutics. D. Loeser and A. L. Konwiser, New York.—p. 35.
Blood Chemistry. R. S. Hunt, Boston.—p. 42.
*Alimentary Tract of Man: III. Gastric Responses to Milk and Buttermilk. T. W. Todd and W. Kuenzel, Cleveland.—p. 43.
Chemical Aspects of Intravenous Dextrose Injections. C. D. Ingersoll, Waukegan, Ill.—p. 51.
Estimation of Blood Sedimentation Time. R. A. Kilduffe, Atlantic City, N. J.—p. 54.
Hot Plates for Staining Sputum Slides. W. D. Stovall and V. Vincent, Madison, Wis.—p. 57.
New Method for Determination of Chlorides in Blood. E. Földes and H. Tauber, New York.—p. 59.
Heating of Serums in Kahn Test. N. Nagle and M. Monell, St. Louis. —p. 62.
Reliability of Gonococcus Fixation Test. T. G. Hull, C. Garwood and N. Hall, Springfield, Ill.—p. 66.
Easily Constructed Slide Rule for Calculating Date on Which a Given Interval in Days Will Fall. T. S. Moise, Bangor, Maine.—p. 72.
Hemoglobin Methods. M. Karshan and R. G. Freeman, Jr., New York. —p. 74.
Rapid Method for Determining Type of Pneumococcus in Sputum. L. Rosenthal and B. Sternberg, New York.—p. 78.
Method of Using Wright's Stain in Staining Jars. R. F. Feemster, New Orleans.—p. 81.
Application of Twort-d'Herelle Phenomenon in Diagnosis of Shiga Dysentery. J. C. Willett, St. Louis.—p. 83.
Rapid Blood Grouping Method. N. Grosof, New York.—p. 85.
Electrocution in Sacrificing Laboratory Animals. L. S. Hrdina, Chicago. —p. 86.

Tubercle Bacilli and Elastic Tissue Fibers in Sputum of Different Types of Phthisis.—Rappaport believes that persistent elastic tissue expectoration, whether there are or are not mild symptoms of clinical activity, has greater significance than the mere expectoration of bacilli has. He found that such cases progressed to slow cavitation, the course of which was chronic but definitely destructive in the long run. The longer such elastic tissue expectoration lasted, the lesser were the chances of the process going to spontaneous healing. On the other hand, in cases showing chronic low grade activity or even moderate degrees of activity in which the sputum showed gradual disappearance of elastic tissue fibers, even if bacillus expectoration continued undiminished, the roentgen rays soon showed definite signs of absorption, and with more or less delay these cases came to clinical arrest. Periodic check-up of the elastic tissue expectoration permitted far-reaching prognostic predications which were borne out by the events to a remarkable degree. These studies of the elastic tissue behavior in the different stages of the various conditions enabled him to compare types and stages of phthisical conditions from the standpoint of elastic tissue observations. Frequently he was able to make even a diagnosis of the particular phase or type of the disease from the sputum examination alone, as supported by the clinical history of the case in question.

Incidence of Bacteria in Sputum Cultures from Fifty Patients Having Asthmatic Bronchitis.—The results of McKinney's study are in general accord with previous investigations on asthma sputums in finding a predominance of streptococci in culture. These results are slightly different, however, in placing the gram-negative cocci (neisseria group) second in number, and the staphylococci fourth. How many of the organisms recovered belonged to the normal mouth flora of the patients was not determined.

Uric Acid Increase in Blood of Patients with Cardiac Decompensation.—A study made by Williams of twenty-two cases of myocarditis and valvular lesions showed that cardiac decompensation without nephritis is associated with a marked increase in the concentration of blood uric acid and a moderate increase in urea and nonprotein nitrogen. There is a marked decrease in the concentration of uric acid and a moderate decrease in urea and nonprotein nitrogen of the blood following improvement in cardiac efficiency. This decrease is accompanied by a diminution in the size of the liver and by an improvement in edema. The results cited support the hypothesis that the liver is an important organ in uric acid metabolism. The determination of the blood uric acid together with the other nonprotein nitrogen extractives of the blood is of diagnostic value only when combined with careful clinical study and repeated urinalyses.

Experimental Elimination of Adhesions Caused by Intraperitoneal Injection of Neoarsphenamine.—The necropsy results from sixty-seven animals injected intraperitoneally, from two to six times, with solutions containing 1 per cent neoarsphenamine form the basis of Noble's report. One per cent aqueous solutions of neoarsphenamine injected intraperitoneally caused adhesion formation in most dogs and cats, but not in guinea-pigs, rabbits or white rats. The addition of from 1 to 4 per cent sodium bicarbonate solution greatly reduced the incidence of adhesion formation following intraperitoneal injections of neoarsphenamine in dogs.

Effect of Lead on Rat Sarcoma.—Buck and Kumro report that, during work on the toxicity of lead compounds, a rat developed a spindle-cell sarcoma. The point of interest is that the rat was heavily loaded with inorganic lead and developed the sarcoma in the presence of a marked plumbism, from which it ultimately died.

Sensitivity of Kolmer and Kahn Tests During Chill and Fever.—Two hundred Kolmer and Kahn tests were performed by Besancon and Mayer on a group of thirty-three syphilitic patients receiving fever therapy (nonspecific protein), whose serologic tests on the blood varied from negative to strongly positive reactions. The tests were performed on blood drawn at normal temperature, during the chill, and during the height of fever (103 F. or more). During the chill, 74 per cent of both the Kolmer and the Kahn tests gave the same readings as at normal temperature. During the fever height, 90 per cent of the Kolmer tests gave the same readings as at normal temperature, while 82 per cent of the Kahn tests gave the same reading as at normal temperature. In those series which showed variations the Kolmer test showed a tendency toward increased positivity during chill, there being 16 per cent which showed a tendency toward negativity; and little tendency during fever height, there being 6 per cent which showed a tendency to increase toward positivity as compared with 4 per cent with a tendency toward negativity. The Kahn test showed a tendency toward negativity in both chill and fever, there being 8 per cent which showed a tendency toward positivity as compared with

14 per cent toward negativity in the former, while 6 per cent showed a tendency toward positivity as compared with 12 per cent toward negativity in the latter.

Toxins, Antitoxins and Dermagens.—The true antibody for toxins is a specific reagin freely circulating in the blood of certain toxin-susceptible individuals. The existence of such an antibody can be demonstrated by means of the complement-fixation reaction or the particular skin tests. For lack of specific terminology, Hadjopoulos and Burbank term this reagin the dermagen on account of its peculiar dermo-activity.

Gastric Responses to Milk and Buttermilk.—Todd and Kuenzel state that in a trained stomach the ingestion of a 5-ounce milk-barium meal is followed by little elongation or lateral distention and by a peristaltic activity so gentle that it may be evinced by nothing more than a shimmer of the shadow outline of the greater curvature. Passage occurs in light shadows like a puff of smoke and the duodenal cap may be indefinite in outline. Under the same circumstances and in like conditions a 5-ounce buttermilk-barium meal is followed by greater elongation and lateral distention of the gastric shadow so that the buttermilk shadow area is greater than the milk shadow area of the same stomach. Peristaltic waves are immediate, of considerable amplitude and massive in appearance. Passage occurs in dense moniliform shadows plainly followed through the duodenum. These facts may be utilized in planning a standard technic of diagnostic meals.

Kansas M. Soc. Journal, Topeka

30: 323-360 (Oct.) 1929

*Treatment of Undulant Fever with Vaccine: Ten Cases. F. E. Angle, Kansas City.—p. 323.
Diagnosis of Difficult Micturition. H. E. McCarthy, Kansas City.—p. 328.
Influenza. N. P. Sherwood, Lawrence.—p. 331.

Treatment of Undulant Fever with Vaccine.—Angle prepared a vaccine from pathogenic strains of bovine and swine *Brucella abortus*. Five pathogenic strains of bovine and one of swine *Brucella abortus* were mixed in equal quantities after being washed from agar slants with sterile saline solution. The suspension was standardized with a McFarland nephelometer, number III, and then placed in a water bath at 60 C. for two hours, recultivated for sterility, and placed in sterile vials. The number of organisms per cubic centimeter was approximately six billions. The preservative used was 0.5 cc. of 10 per cent phenol to each 10 cc. of vaccine. The dose given in his ten cases was arbitrarily started at 0.25 cc. and increased 0.25 cc. with each dose until the full dose of 1 cc. was given. These were administered on consecutive days unless some symptoms seemed to contraindicate. At no time was more than 1 cc. used. Subcutaneous injection was used in each of the first seven cases and intramuscular injection in the last three cases. As few as three and as many as eight doses were administered. A general reaction occurred after the second 0.5 cc. dose was used in three cases, after the third 0.75 cc. dose in three cases and after the fourth 1 cc. dose in four cases. After the initial severe reaction, subsequent doses seemed to elicit only mild or no reactions. At the site of injection there has appeared an indurated area which causes the patient slight discomfort and is slow to disappear. In the first three cases, no recurrence of symptoms has appeared after nine months. It has been observed in the study of these cases that the nervous symptoms are the slowest to respond, and, although they are clinically cured, slight "neurasthenic" manifestations have remained. The clinical varieties of the disease treated have been acute undulating type, ambulatory type, and one case of acute malignant type. Little difference has been noted in results of treatment in the different varieties. During the course of the disease, in the cases reported, numerous drugs and biologics were used with only slight or transitory benefit.

Military Surgeon, Washington, D. C.

65: 645-781 (Nov.) 1929

Edward Jenner and the Discovery of Smallpox Vaccination. L. H. Roddis.—p. 645.
Large Stone in Urinary Bladder. H. W. Jones.—p. 690.
Analysis of Aviation Physical Examinations. J. D. Benjamin.—p. 693.
Undulant Fever: Case. H. E. Auringer.—p. 696.
Atresia of Nares as Complication of Variola: Case. C. H. Dewey.—p. 702.
Visit to Mayo Clinic. B. S. McClintie.—p. 705.
Volunteer Regiment in 1846-1847. L. C. Duncan.—p. 709.

Minnesota Medicine, St. Paul

12: 659-730 (Nov.) 1929

Thyroid as Cause of Cardiac Disability. D. K. Bacon, St. Paul.—p. 659.
*Preliminary Hemostasis in Thyroidectomy. M. Nordland, Minneapolis.—p. 663.
*Exophthalmos of Exophthalmic Goiter. F. E. Burch, St. Paul.—p. 668.
Progress in Knowledge of Goiter with Particular Attention to Surgical Treatment. J. D. Pemberton, Rochester.—p. 676.
Treatment of Toxic Thyroid with Rays of Short Wavelengths. G. Clement, Duluth.—p. 682.
Early Diagnosis of Heart Disease. C. L. Greene and J. F. Borg, St. Paul.—p. 684.
Purpura Hemorrhagica Following Neoarsphenamine. J. Jensen, Minneapolis.—p. 689.
Sense of Hearing Survey of School Children in Fergus Falls. W. L. Burnap, Fergus Falls.—p. 691.
Treatment of Acute Otitis Media in Infants and Children. C. W. Rumpf, Faribault.—p. 694.
General Hospital and Tuberculosis. H. H. Hielscher, Mankato.—p. 700.
Cost of Medical Care. O. E. Locken, Crookston.—p. 703.

Preliminary Hemostasis in Thyroidectomy.—Experience in 186 cases leads Nordland to conclude that preliminary ligation of the inferior thyroid arteries in goiter surgery, first proposed by Quervain in 1911, makes a neat, clean and practical operation. Thyroidectomy becomes a safe procedure with this method, because of better protection to the laryngeal nerves and the parathyroids. This method gives better hemostasis because ligation is performed before division of the artery takes place and because the inferior artery is normally one-third larger than the superior and furnishes the main blood supply to the gland. The danger of postoperative hemorrhage is reduced to a minimum, since fewer catgut ties are necessary within the gland. Because the operative field is drier, there is consequently less postoperative drainage, a more rapid convalescence, a better scar and a greater chance of permanent cure.

Exophthalmos of Exophthalmic Goiter.—Burch reviews some of the eye signs of exophthalmic goiter and the theories for the occurrence of exophthalmos. A case is mentioned in which ocular symptoms occurred without other signs of goiter; also a case in which both eyes were lost from exophthalmos eighteen months following successful operation for goiter without any eye symptoms at the time of operation or during the interval.

New England J. of Medicine, Boston

201: 753-800 (Oct. 17) 1929

*Ankle Fractures. F. J. Cotton and R. Berg, Boston.—p. 753.
Distribution of Arsenicals by Massachusetts Department of Public Health. G. H. Bigelow and N. A. Nelson, Boston.—p. 761.
Suggested Expansion of Medical Examiner's Functions. E. M. Morgan, Boston.—p. 765.
Why a Medicolegal Society. C. W. Skelton, Providence, R. I.—p. 771.
Progress in Psychiatry. I. Coriat, Boston.—p. 774.

Ankle Fractures.—Cotton and Berg regard major ankle injuries not as fractures but as dislocations complicated by fractures. The following classification is presented: I, outward dislocation, or Pott's fracture; II, inward dislocation, reversed Pott's; III, backward dislocation, "Cotton's fracture"; IV, upward luxations, previously neglected class.

Occupational Therapy & Rehabilitation, Baltimore

8: 317-377 (Oct.) 1929

Value of Occupational Therapy in Nervous Diseases. G. W. Howland, Toronto.—p. 317.
Some Conditions Met with in Feebleminded: State Program of Care Provided and Importance of Hand Training in Education. G. L. Wallace, Wrentham, Mass.—p. 321.
Habit Training. C. L. Vaux, Central Islip, New York.—p. 327.
Value of Occupational Therapy from Medical Inspector's Standpoint. P. Smith, New York.—p. 331.
Occupational Therapy in Industrial Injuries. M. Taylor, Milwaukee.—p. 335.

Philippine Islands M. Assn. Journal, Manila

9: 307-346 (Sept.) 1929

*Efficacy of Ethyl Chaulmoograte, Ethyl Hydnocarpate and Ethyl Esters of Total Fatty Acids of Hydnocarpus Wightiana Oil. B. De Vera and C. B. Lara.—p. 307.
Observations on Kahn-Positive Lepers Treated with Neosalvarsan and Subsequently with Mixed Ethyl Esters of Hydnocarpus Wightiana Oil. B. De Vera.—p. 318.
*Efficacy of Plancha, or Infiltration, Method of Treatment in Early Cases of Leprosy. C. B. Lara and C. Nicolas.—p. 321.

*Treatment of Chief Types of Cutaneous Lesions in Leprosy by Plancha, or Infiltration, Method. F. I. Velasco, J. M. Alonso, G. Limkako and G. Fernandez.—p. 327.

Plancha, or Infiltration, Method of Treating Leprosy. C. B. Lara. —p. 336.

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Efficacy of Ethyl Chaulmoograte, Ethyl Hydnocarpate and Ethyl Esters of Total Fatty Acids of Hydnocarpus Wightiana Oil.—These were submitted to a clinical trial by De Vera and Lara, with a view to comparing their efficacy in leprosy. Twenty-five patients were given each preparation; all showed before the trial definite clinical evidences of active disease, and smears from skin or nasal lesions or from both were positive for *Myobacterium leprae*. The three groups were as nearly uniform as possible with respect to type and advancement of the disease. The trial was limited to approximately one year because of the difficulty of preparing the single esters, especially the ethyl hydnocarpate. The results indicate that the single esters are superior to the mixed esters. This superiority is shown by the "greater number of 'negatives,' or apparent cures," with the single esters, and by the finding that a number of moderately advanced cutaneous or mixed cases, considered to be a more severe form of the disease, have become negative with these preparations, whereas only cases with slight skin lesions, with or without advanced neural lesions, which represent the milder form of the disease, have become negative under the mixed esters. The better results with the single esters are explained by the authors as probably due to their higher content of active constituent per given volume. It is not possible to tell from the results which of the two single esters is the most active; probably they are about equally active.

Efficacy of Plancha, or Infiltration, Method of Treatment in Early Cases of Leprosy.—The plancha, or infiltration, method as employed in Culion consists essentially of multiple intradermal injections of the usual antileprosy drugs directly into leprous skin lesions. The number of injections to be given in any case is determined by the size of the lesion to be infiltrated; each injection should produce a wheal not larger than 1 cm. square. The total dose that can be given safely by this method should not exceed twice the usual intramuscular dose of from 4 to 5 cc. Five early cases and one slightly more advanced case of leprosy, with bacteriologically positive skin lesions, were treated by Lara and Nicolas with the iodized ethyl esters of *Hydnocarpus wightiana* oil, given by the plancha, or infiltration, method. Four of the early cases became bacteriologically negative in one month, and one in two months. The only slightly more advanced case became negative after five months of treatment. After considering certain possibilities of error or exaggeration with respect to both the basic material and the interpretation of the results, they conclude that the plancha, or infiltration, method of treatment is not only very effective in early cases of leprosy but also is even more effective than are the intramuscular and the subcutaneous methods.

Treatment of Chief Types of Cutaneous Lesions in Leprosy by Plancha, or Infiltration, Method.—Three approximately equal groups, of about 100 cases each, representing the three chief types of leprous skin lesions, were treated by Velasco et al. by the combined infiltration and intramuscular methods of treatment. Each patient received, besides the regular intramuscular dose of ethyl esters, infiltration treatment in one of the two symmetrical lesions selected for the study. The drugs used for infiltrating the lesions were the purified oil and the iodized ethyl esters of *Hydnocarpus wightiana*, the cases having been about equally divided between the two preparations. After ten months of the infiltration treatment, there was found a greater number of negative and improved cases among the treated than among the control lesions. Of the three chief types of skin lesions, the macules gave the most negative results, and the infiltrations the next; the nodules gave none. Of the two preparations, the iodized ethyl esters gave slightly better results. Bacteriologic and histologic examinations of the lesions showed granulation and gradual diminution in the numbers of acid-fast bacilli and a more or less marked diminution, to complete disappearance, of the round cell infiltrations. These changes were much more marked in the treated than in the control lesions. The evidence shows that the combined intramuscular and infiltration methods of treatment are more effective than is the intramuscular method alone. The combined treatment is applicable in most cases and can therefore be recommended for extensive routine use.

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Public Health Reports, Washington, D. C.

44: 2505-2574 (Oct. 18) 1929

Efficiency of Dust-Removal Systems in Granite-Cutting Plants. J. J. Bloomfield.—p. 2505.

44: 2575-2634 (Oct. 25) 1929

History of Malaria in United States. M. A. Barber.—p. 2575.
Use of Stearates (Calcium and Aluminum) as Diluents for Paris Green in Anopheles Control. A. F. Dolloff.—p. 2588.

Radiology, St. Paul

13: 283-376 (Oct.) 1929

Investigation of Characteristics of Philips Type of Müller Metalix Tubes as Revealed by Roentgenogram. W. C. Barker, Philadelphia.—p. 283.
Measurement of Roentgen Dosage by Physical Means. G. Failla, New York.—p. 293.
Skin Erythema for Combinations of Gamma and Roentgen Rays. E. H. Quimby and G. T. Pack, New York.—p. 306.
Radiosensitivity. J. Ewing, New York.—p. 313.
Response of Various Types of Breast Cancer to Radiation. F. E. Adair, New York.—p. 319.
Variation in Radiosensitivity of Epidermoid Carcinoma of Cervix Uteri. W. P. Healy, New York.—p. 323.
Changes in Primary and Metastatic Bone Tumors Following Various Doses of Roentgen Ray. R. E. Herendeen, New York.—p. 326.
Factors in Dosage Determination in Interstitial Radiation. H. E. Martin, New York.—p. 338.
Treatment of Epithelioma of Penis Based on Study of Sixty Cases. B. F. Schreiner, Buffalo.—p. 353.
Intra-Uterine Fracture: Case. H. Snure, Los Angeles.—p. 362.

Tennessee State M. Assn. Journal, Nashville

22: 195-232 (Oct.) 1929

Individualism and Cooperation in Medicine. W. S. Thayer, Baltimore. —p. 195.
Treatment: Infection of Hand. J. O. Gordon, Memphis.—p. 201.
Allergy. A. M. Goltman, Memphis.—p. 204.
Report of Tennessee's Delegates to American Medical Association in Portland, Ore. L. L. Sheddan, H. B. Everett and M. M. Cullum. —p. 211.

Texas State J. of Medicine, Fort Worth

25: 385-444 (Oct.) 1929

Surgery of Pulmonary Tuberculosis. J. W. Nixon, San Antonio.—p. 391.
Cancer of Stomach. G. Turner, El Paso.—p. 395.
Subluxation of Sacro-Iliac Joint: Four Cases. S. C. Red, Houston.—p. 398.
Treatment of Salpingitis. P. H. Scardino, Houston.—p. 399.
Pneumonia. L. Rice, San Antonio.—p. 403.
Food Infection and Food Intoxication. W. C. Cox, Fort Sam Houston. —p. 407.
Problems in Cardiac Diagnosis. C. M. Grigsby, Dallas.—p. 410.
Recent Advances Concerning Ocular Focal Infections. C. A. Bahn, New Orleans.—p. 412.
Indication for Tonsillectomies in Acute Arthritis. R. H. T. Mann, Texarkana.—p. 417.
Abscess of Lung: Direct Treatment Through Bronchoscope. G. S. McReynolds, Temple.—p. 418.
Endocrinology in Eye, Ear, Nose and Throat Practice. J. S. Sweeney, Dallas.—p. 421.
Obscure Mastoid Infection in Infants. E. M. Sykes, San Antonio.—p. 424.

United States Vet. Bur. M. Bull., Washington, D. C.

5: 729-826 (Oct.) 1929

Clues for Recognition of Epidemic Encephalitis in Its Different Forms and Stages: Comments on Treatment. L. F. Barker.—p. 729.
Subphrenic Abscess. E. T. Gallagher and H. A. Scott.—p. 746.
Syphilis of Intrathoracic Vessels. T. T. Tildon.—p. 752.
War Neurosis Eventuating in Delusions. S. Dix.—p. 760.
Ocular Contraindications in Arsenical Treatment of Syphilis. R. D. Sleight.—p. 765.
Artificial Pneumothorax. G. O. Haynes.—p. 768.
Influences Other Than Disease on Treatment of Tuberculous. H. F. Parker.—p. 773.
Disposal of Hospital Refuse and Waste. O. D. Wescott.—p. 777.
Injection Method of Treating Varicose Veins. O. P. Goodwin.—p. 782.
Substance of Psychiatric Social History. I. L. Morgan.—p. 785.
Technic in Securing Wax Impressions, Investing and Casting. M. E. Day.—p. 791.
Pellagra Resulting from Self-Imposed Deficient Diet. R. W. Brace.—p. 794.
Conversion Hysteria. H. W. Brann.—p. 798.
Unusual Inguinal Hernia. J. D. Brooks.—p. 801.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British M. Journal, London

2: 655-702 (Oct. 12) 1929

*Tuberculosis in Early Childhood. C. McNeil.—p. 655.
Chronic Cervicitis (Leukorrhea). J. Barris.—p. 658.
Pathology of Chronic Cervicitis. G. I. Strachan.—p. 659.
Treatment of Chronic Endocervicitis. R. S. Statham.—p. 661.
Treatment of Influenza with S. U. P. 36. R. M. Pearce.—p. 663.
*Hinton Test for Syphilis. T. E. Osmond.—p. 666.
Wassermann Reaction and Kahn Test. F. Marsh.—p. 666.
*Anthrax in a Fifteen Months' Old Baby. A. E. Hodgson.—p. 667.
Fracture of Patella with Atypical Signs and Symptoms. A. H. Laird. —p. 668.
Treatment of Eclampsia by Spinal Anesthesia. G. H. Waugh.—p. 668.
*Ionized Silver in Treatment of Burns. L. Shillito.—p. 668.

Tuberculosis in Early Childhood.—McNeil presents the results of his survey of 254 cases of tuberculosis in children up to 12 years of age. There were 174 cases of tuberculous meningitis, all fatal; seventy-six cases of pulmonary tuberculosis, of which forty-one were fatal; and 195 cases of abdominal tuberculosis, of which ninety-three were fatal. These three varieties of tuberculosis were often present in combination. He says that, in the first two years of life, tuberculous infection nearly always proceeds to tuberculous disease; and tuberculous disease ends in death in nearly all cases of pulmonary lesions, either by acute pulmonary tuberculosis or by meningitis, and has a like ending in a majority of cases of abdominal tuberculosis. At this period, dormant or healed tuberculosis is a rare event; in the third, fourth and fifth years it becomes more common; while the number of recoveries from active tuberculous disease also increases. Often a condition of ill health seemed to be partly due to a concealed tuberculous focus, in some cases presumed to be in the thorax, in others in the abdomen, but in which no proof of active tuberculous disease could be obtained. Healed or inactive tuberculous lesions are rare under 2 years; they increase after that age; and the majority of these healed or latent tuberculous lesions are in the abdominal mesenteric glands. The practical conclusion of the clinical and postmortem evidence is that latent tuberculosis can scarcely be said to occur in infancy and is uncommon in the later years of the period of the survey. And yet the clinical consciences are often troubled by this haunting fear of latent tuberculosis, throughout childhood, and particularly in the lungs. The loose statements frequently made as to the prevalence of latent tuberculous infection in early childhood are not supported by either clinical or postmortem evidence. The problem of diagnosis at this time is the discovery of active, not of latent, tuberculosis in the thorax or abdomen.

Hinton Test for Syphilis.—Five hundred serums were submitted to the Wassermann and Hinton tests by Osmond. They were mostly obtained from treated cases of syphilis, but a number from untreated cases of syphilis, and cases without syphilis were included. Absolute agreement was noted in 409 cases, relative agreement in forty-nine cases, and disagreement in forty-two cases. Of the forty-two cases in which there was disagreement the Wassermann test appeared to be correct in twenty-five and the Hinton in seventeen. Of the twenty-five cases, in eighteen of treated syphilis the Wassermann reaction was positive and the Hinton negative; in three cases of untreated syphilis the Wassermann reaction was positive and the Hinton negative; in two cases without syphilis the Wassermann reaction was negative and the Hinton strongly positive; in two cases without syphilis the Wassermann reaction was negative and the Hinton weakly positive. Of the seventeen cases, in fifteen of treated syphilis the Wassermann reaction was negative and the Hinton positive; in two cases of untreated syphilis the Wassermann reaction was negative and the Hinton positive. Comparison of the Hinton test with the Kahn test showed absolute agreement in 170 cases, relative agreement in seventeen cases, and disagreement in fourteen cases. Of the fourteen cases in which the two tests showed disagreement, seven were in favor of the Kahn and seven in favor of the Hinton, as judged by the clinical history of the cases. The Hinton and sigma tests were compared. There was absolute agreement in 113 cases, relative agreement in fourteen, and disagreement in ten. Of the ten cases in which there was disagreement, six were in favor of the Hinton and four in favor of the sigma. It would appear that the Hinton test can claim to be the equal, at least, of the Wassermann, Kahn and sigma tests. It is the easiest to perform, and far easier to read than either the Kahn or the sigma test. The only difficulty is the standardization of the antigen; once this is overcome, the setting up and reading of the test are simplicity itself.

Anthrax in Fifteen Months Old Baby.—Hodgson asserts that this is the earliest age at which the disease has been recorded. The source of infection originated in the dust carried on the father's clothes from his work. The response to antianthrax serum injected intramuscularly, without excision of the "malignant pustule," was gratifying.

Ionized Silver in Treatment of Burns.—Shillito's treatment is as follows: Silver nitrate in a 1 to 5 per cent solution is sprayed or painted on the area affected by the burn. An exposure of from one to five minutes is then given with a mercury vapor or tungsten arc lamp at a distance of from 6 to 20 inches, the varying limits being given to allow for the factors of the age of the patient, the size of the burn and the efficiency of the lamp. In the absence of an artificial source of ultraviolet rays an exposure to real sunlight, if it can be obtained, for half an hour produces much the same result. The silver nitrate is ionized by the light and the silver ion combines with the cell proteins—an effect which is practically instantaneous with artificial ultraviolet radiation; the whole area becomes black and dry, and a shiny coagulum is formed, fixing proteins resulting from cell destruction, which, if absorbed, give rise to the toxemia often associated with burns, and at the same time the penetration of the rays to the deeper layers is prevented, thus counteracting any possibility of over-irradiation. Rapid healing is produced in second degree burns and the pain is greatly decreased. No dressings are used and the bedclothes are not allowed to touch the treated area. Another application may be given in from twenty-four to thirty-six hours, if required.

Kenya & E. African M. Journal, Nairobi

6: 151-180 (Sept.) 1929

*Treatment of Blackwater Fever. J. Forbes.—p. 152.
Cataract. Dr. Shah.—p. 158.
Incidence of Helminths in Kitui District. R. C. Briscoe.—p. 175.

Treatment of Blackwater Fever.—Forbes relates his experiences with this disease in Kenya, East Africa, and describes his method of treatment by using alkalis freely. He says he has never seen a case of blackwater fever in which the urine was alkaline; in fact, in all his cases the acidity has been so great that it was extraordinarily difficult, even with large and continuous doses of alkali, to obtain an alkaline reaction and, having obtained such, to maintain the alkalinity. This high acidity of the urine profoundly impressed him and he formed the opinion that the toxic substances causing the high acidity were really the cause of the hemolysis and that, if he could administer alkalis to the extent of continuously alkalizing the urine, the hemolysis would cease. This proved to be the case in his practice. Only in one type of case does this method of treatment fail, and that is in those uncommon cases of uncontrollable vomiting in which even a teaspoonful of water is immediately vomited. Intravenous injection of alkali may save these patients. As soon as hemoglobinuria is observed in a case developing while under treatment in the hospital, all food of every description is immediately stopped. Nothing but boiled water is given until the urine is clear for three days and alkaline in reaction. This can be carried on for fourteen days or more. Alkali is given as follows: sodium bicarbonate, 2½ ounces (75 Gm.); calcium carbonate, 5 ounces (150 Gm.); magnesium carbonate heavy, 5 ounces (150 Gm.), and bismuth subcarbonate, 10 drachms (40 Gm.). One flat teaspoonful of this powder is given every two hours in water from 6 a. m. to 10 p. m., when a double dose is given. (The dose is about 36 grains, or 2.3 Gm.). Boiled water is given freely and a nurse must see that some is taken every half hour. A table should be so placed that the patient, if not too weak, can help himself. In a bad case the nurse should never leave the patient. Absolute rest is essential. Three or four doses of mild mercurous chloride, about ¼ grain (0.05 Gm.),

at intervals of half an hour, are useful. An enema of soap and water is given at the outset and enemas of a weak solution of potassium permanganate are administered with advantage twice daily. Forbes has tried plasmochin but failed to get any results from its use. If a temperature resembling that of subtertian fever continues and parasites are found, he gives 1 drachm (4 cc.) of tincture of cinchona three times a day. This can be increased in a day or two, the urine being carefully watched; and, if no recurrence of blackwater occurs, a small quantity of quinine dihydrochloride can be added to the cinchona.

Presse Médicale, Paris

37: 1197-1212 (Sept. 14) 1929

Pleural Suppurations in Acute Pulmonary Infections. F. Bezançon and E. Bernard.—p. 1197.
Prophylaxis of Scarlet Fever by Bacteriologic Control of Convalescents. M. Liégeois and J. Fricker.—p. 1200.
*Incontinence of Urine: Treatment by Intravenous Injection of Methenamine. L. Caffé, Bainglas and Comsa.—p. 1202.
Cholesteroligenic Power of Hydroxyfatty Acids. A. Machado.—p. 1203.

Incontinence of Urine: Treatment by Intravenous Injection of Methenamine.—Caffé et al. observed the recovery from urinary incontinence of a patient suffering from paraplegia and cholecystitis who was given injections of 1 Gm. of methenamine in 5 cc. of water. The manifestations of cholecystitis disappeared within one week together with the involuntary micturition. Caffé et al. applied this method of treatment to seventeen patients suffering from nervous disorders and urinary incontinence. Of these, five did not respond. In others the condition improved when they were under treatment, but a recurrence took place if the treatment was stopped. A third group yielded only after a second series of injections was given. A last group of six patients recovered following from three to nine injections of methenamine solution without recurrence of the condition.

Revue Française de Gynécologie et d'Obst., Paris

24: 401-464 (July) 1929

*Are Tears of Perineum Occurring in Labor to Be Sewed Immediately? A. Grosse.—p. 401.
*Filhos' Caustic. L. Pouliot.—p. 420.
*Stenosis of Cervix of Uterus: Treatment by Stomatoplasty. J. P. Tourneux.—p. 442.

Are Tears of Perineum Occurring in Labor to Be Sewed Immediately?—On the basis of his experience, Grosse advises immediate surgical intervention after childbirth unless contraindicated by the length of labor, in dystocia, lack of aseptic conditions or infections. In this case, a period of from three to four months should be allowed to elapse to enable the tissues to regain their normal condition. He considers that unfavorable results are caused almost invariably by faulty technic and gives a brief description of his method.

Treatment of Cervical Metritis with Filhos' Caustic.—On the basis of his experience in more than 400 cases of cervical metritis, Pouliot discusses the technic of cauterization, according to Filhos, in the treatment of this condition. He considers irrigation after the use of the caustic one of the most important steps in the procedure, to inhibit further action. In 80 per cent of 100 patients chosen at random, recovery was effected with two applications; in 15 per cent one cauterization was sufficient and in 5 per cent three treatments were necessary. The period between the treatments varied from two to three weeks. In a mild case six weeks was allowed to pass before reexamination to determine the need for a second application. Coincident with this treatment, polyvalent vaccines and the use of antiseptics for dressings are advised. Pouliot observed the occurrence of pregnancy in seventy-six of his patients following recovery; in only six did a miscarriage ensue. Filhos' caustic consists of 5 parts of potassium hydroxide and 1 part of unslaked lime.

Stenosis of Cervix of Uterus: Treatment by Stomatoplasty.—According to Tourneux, stricture of the cervix due to a congenital condition or caused by scars occasioned by infections or stenosis, following cauterizations or surgical intervention, may be most effectively treated by a method of stomatoplasty used by Pozzi in 1903. The case histories of five patients are given, demonstrating the value of this intervention. Tourneux considers two contraindications for the operation. It is useless in patients in whom infantilism of the uterus persists and may be dangerous if applied when coincident infection of the adnexa is present. Careful examination is advised before one decides to reestablish the permeability of the cervical canal.

Revue Neurologique, Paris

2: 1-160 (July) 1929

Gumma of Brain: Surgical Treatment. D. Bagdasar.—p. 1.
"Subcortical" Epilepsy. L. Marchand and A. Courtois.—p. 31.
*Relation Between Cerebrospinal Fluid and Body Temperature. A. Gordon. p. 44.

Relation Between Cerebrospinal Fluid and Body Temperature.—Gordon's report covers observations made on 250 patients. Of twenty-five adults with hemiplegia, five had symptoms of intracranial hypertension. There were seventeen cases of idiopathic epilepsy, ten of meningitis, forty of neurosis, twelve of manic-depressive psychosis, ten of transverse myelitis, twenty of tabes, four of dementia praecox and forty of intense headache of syphilitic origin. The children's group was composed of ten patients with meningitis, fifteen mentally backward children, twenty epileptic patients and five patients with Little's disease. In all these, a withdrawal of cerebrospinal fluid produced a rise in temperature proportional to the amount withdrawn. In children the clinical effect was similar to the one in adults, only the rise in temperature was greater. If the puncture was not successful and fluid could not be withdrawn, the temperature remained the same, even if repeated puncture was performed. In several patients in whom irritation of the meninges was present, withdrawal of the purulent cerebrospinal fluid was followed by the customary therapy of injection of physiologic solution of sodium chloride. In these, an instantaneous lowering of the temperature occurred, followed, however, by a considerable rise. Several patients in whom ventricular puncture was performed and the fluid withdrawn and replaced by an equivalent amount of air or physiologic solution of sodium chloride showed a greater rise in temperature than those in whom this substitution was not made. The rise was greater in manic-depressive insanity than in psychoneurosis, and in the former it was higher in the maniacal attack than during the period of depression. According to Gordon, the mechanism determining these phenomena is located in the tissues enclosing the ventricles, more especially the third ventricle of the brain. The changes in the configuration of the ventricles caused by the withdrawal of the cerebrospinal fluid produce an irritation of the blood vessels and the nerve endings located in the walls and thus cause a change of temperature in the body. Gordon points out that the reformation of the cerebrospinal fluid following puncture, chemical changes produced in the fluid by the puncture, the development of localized meningitis and individual variations in the rise or fall of temperature are factors necessitating further investigation. He stresses their practical importance as assisting in the diagnosis and the prognosis of disease.

Schweizerische medizinische Wochenschrift, Basel

59: 925-948 (Sept. 14) 1929

*Modern Dietetics: Feeding of Infants and Nutrition of Healthy and of Sick Persons. E. Feer.—p. 925.
Statistical Report of 107 Years of Medicolegal Activity in a Swiss Rural District. F. Decurtins.—p. 932.
Functioning of Blood-Brain Barrier. L. Stern.—p. 935.
Basal Metabolism and Specific Dynamic Action of Proteins. C. de Montmollin.—p. 940. C'tn.

Modern Dietetics: Feeding of Infants, Nutrition of Healthy and of Sick Persons.—Feer discusses modern tendencies in dietetics. Concerning infant feeding he says that formerly many children were given excessive quantities of milk. He states that after the first six months the child should receive not more than 500 Gm. of milk. However, the reduced quantity of milk should be supplemented by sugar, flour, vegetables and fruit juices. The author further discusses the diet of adults. He enumerates the advantages and the disadvantages of meatless diets and of diets rich in meat. In discussing the protein requirements he evaluates meat, milk, eggs and potatoes. Bread is for many people one of the most important foods. The author asserts that whole grain breads are superior to branless breads and recommends especially whole wheat bread. He discusses the food value of vegetables, fruits and raw fruit

and vegetable diets, the value of vitamins and the use of salt and salt-free diets. He then gives advice concerning diets in rickets, anemia, constipation, obesity and the exudative diathesis. In acute, febrile diseases the patient should receive a sufficient amount of fluids. Fruits, potatoes, cream and foods prepared from flour may also be given. However, foods that are rich in protcins are to be avoided. Further, the author gives dietary regulations for patients with diarrhea and for those with nephritis. A vegetarian diet is recommended in hypertension, arteriosclerosis, rheumatism, disturbances of the liver, diabetes and heart disease. In discussing the dietary treatment of tuberculosis, the author mentions particularly the Gerson-Sauerbruch-Herrmannsdorfer method.

Clinica Chirurgica, Milan

32: 839-1252 (Aug.) 1929

*Fractures of Lower Extremities of Tibia and Fibula. C. Lorenzetti.—p. 839.
*Habitual Luxation of Shoulder and Operative Treatment with Artificial Ligament. F. Cattaneo.—p. 1197.

Fractures of Lower Extremities of Tibia and Fibula.—Lorenzetti has prepared a comprehensive article (356 pages, with 263 illustrations) on 435 fractures of the tibia and the fibula (chiefly the inferior extremities), which were gathered from a total of 5,561 fractures treated during two periods, from 1905 to 1914 and from 1919 to 1927, in the surgical institutes under the direction of Baldo Rossi, who is decidedly opposed to surgical exposure of recent fractures of this kind. His method of choice is reduction by systematic external manipulations and a careful, temporary corrective immobilization in the first stage, followed by a final immobilization in a plaster cast. However, Lorenzetti does not state absolutely that operative intervention may not be indicated, exceptionally, even in the primary stage, but merely reports that in the large series of cases of the clinic it has not as yet been found necessary. He is, nevertheless, convinced that the indications for operative intervention cannot be as widely taken as a perusal of modern literature would seem to indicate. He thinks that the bloodless method, if carefully applied, leads to results comparable anatomically with the best results of operative treatment, and, from the functional standpoint, it is far superior.

Habitual Luxation of Shoulder and Operative Treatment with Artificial Ligament.—Cattaneo recalls that numerous are the methods of various schools and individual surgeons for the treatment of habitual luxation of the shoulder joint. In four cases he employed a free transplant of fascia and recommends the method for its simplicity. He makes an incision in the external fascia of the thigh and removes a strip about 20 cm. long and 2 cm. wide. An incision is then made over the pecterodeltoid sulcus and a corresponding opening posteriorly at the same level, and through these the strip of fascia is passed. Thereupon an incision is made in the fascia overlying the tip of the acromion and a strong osteofibrous bridge is prepared. Through the soft parts beneath the deltoid muscle, he joins at that point the two ends of the strip, which, after being passed beneath the osteofibrous bridge, are fastened with silk sutures. The incisions are closed and a plaster cast is applied, which is removed at the end of twenty days. The sutures are removed and physical therapy is applied.

Pediatria, Naples

37: 911-966 (Sept. 1) 1929

*Pineal Syndrome in Early Childhood. F. Morabito.—p. 911.
*Treatment of Rickets with Viosterol. A. Zallocco.—p. 933.
Alkali Reserve of Blood of Infants with Malaria. A. Sirca.—p. 947.

Pineal Syndrome in Early Childhood.—Morabito's patient, a girl, aged 8, presented excessive adiposity, considerable growth of hair on the pubes, face, back and arms, and overdevelopment of the external genitalia and the breasts, which resembled those of an adult woman. The child presented simultaneously abnormality of character and mental inertia, and she complained of frequent headaches localized in the occipital region. Her height was normal. General and roentgen examinations failed to reveal the cause of the condition. Examination of both eyes disclosed venous stasis with circumscribed retinal edema, caused by increased intracranial tension. The Wassermann reaction of the blood and cerebrospinal fluid was strongly positive. A pineal syndrome, caused either by a tumor or by a syphilitic gumma in the pineal body, was diagnosed. This syndrome in the author's case was well differentiated from precocious puberty, either of genital origin or of corticosuprarenal origin, since the child did not menstruate; and sexual desire, changes of voice to a masculine tone and increased muscular strength were absent. The author considers roentgen irradiation as the only treatment of value in this condition, in which the evolution is variable and the prognosis is bad. The child's mother refused roentgen therapy. The patient received pineal extracts, parenterally, and mercury inunctions. Her condition did not improve.

Treatment of Rickets with Viosterol.—Zallocco used with success a 1 per cent solution of viosterol (irradiated ergosterol) in daily doses of from 2 to 5 mg., in twenty rachitic infants, aged from 4 to 20 months. The treatment was given in three courses of twenty days' duration each, with an interval of eight days between the courses. All the children were fed artificially with cow's milk, either alone or in admixture with some commercial preparation. As an etiologic factor in the whole group, syphilis of the parents was found in four, tuberculosis (either of the father or of the mother) in four, and some of them were convalescing from measles. All the infants had symptoms of rickets. The author concludes that viosterol is of great value in the treatment of rickets, and it should be preferred to irradiated foods. The optimal results were obtained with combined treatment with viosterol and thyroid.

Policlinico, Rome

36: 843-878 (June 17) 1929. Practical Section

Headache and Its Treatment. G. Catola.—p. 843.
*Intra-Arterial Medication of Deep Diffuse Phlegmon of Hand. U. Bonoli.—p. 851.
Subacute Pseudorheumatism in Late Congenital Syphilis. A. Starna.—p. 853.

Intra-Arterial Medication of Deep Diffuse Phlegmon of Hand.—Bonoli's patient, a laborer, aged 17, four days previous to examination had pierced the palm of his right hand with the point of a file, following which the hand had gradually swollen and had become painful. On examination, a painful lymph node the size of a filbert was noted. The temperature was 38.5 C. (101.3 F.); the whole hand was much swollen and painful to the touch. The skin was red, tense and shiny. There was no sign of pus. It was a deep diffuse phlegmon in the stage of infiltration. Two hours later, under ether anesthesia, without the application of a tourniquet, Bonoli exposed the brachial arterial artery at the middle third of the arm, and, inserting a very fine needle into the lumen of the artery, he had injected about 7 cc. of an isotonic solution of a colloidal silver preparation when the patient showed signs of shock due to defective anesthesia, whereupon the needle slipped out of the arterial lumen. The operator punctured the artery again, but a second shock caused the needle to slip out a second time. Not wishing to traumatize the artery further, although disappointed over the small amount of colloid injected (in all, little more than 8 cc.), he closed the wound, leaving the hand without any bandage. When he saw the patient the next day, the latter stated that he had been able to sleep for the first time in several nights. He had no pain in the hand, and the axillary temperature was 37.7 C. (100 F.). During the next twenty-two hours he had no discomfort of any kind. The swelling of the hand retrogressed markedly. The skin was no longer tense and shiny but wrinkled and dry. There was no redness, no chilly feeling and no formication. The sensitiveness of the skin was normal. There was still a slight soreness in the hand on pressure. On the seventh day the sutures were removed from the perfectly aseptic wound, and on the twelfth day the patient was dismissed fully cured.

36: 1275-1310 (Sept. 9) 1929. Practical Section

Treatment of Simple Traumatic Hydrarthrosis of Knee. F. Capaccini.—p. 1275.
Old Bimalleolar Fracture and Posterior Subluxation of the Foot, Treated Surgically. L. Urbani.—p. 1277.
*Unilateral Syndrome Resembling That of Raynaud's Disease and Due to Supernumerary Rib. P. Capone-Braga.—p. 1281.
New Observations on Incidence of Amebiasis in Sicily. C. Pappalardo.—p. 1284.

Unilateral Syndrome Resembling Raynaud's Disease.—Capone-Braga recites a case of cervical rib associated with vasomotor phenomena resembling those occurring in Raynaud's disease. The case is of interest for two reasons: the post-traumatic beginning of the syndrome and the marked improvement following the removal of the supernumerary rib. The question that arose was why the supernumerary rib during the course of the many years it existed attracted no attention to itself, but did so immediately after a trauma called forth a series of disturbances.

Archivos Españoles de Pediatría, Madrid

13: 449-512 (Aug.) 1929

*Epidemic Acidosis (Acetonemia) in Childhood. C. Sáinz de los Terreros.—p. 449.
Roentgen Diagnosis of Miliary Tuberculosis. M. and F. Arce.—p. 454.
Congenital Syphilis. J. Fernández de la Portilla.—p. 465.

Epidemic Acidosis (Acetonemia) in Childhood.—Sáinz de los Terreros noted the occurrence of acidosis during an epidemic of influenza in children. The disease developed among children who previously had had acidosis. All the children had vomiting, diarrhea, nervous symptoms and hyperpyexia, but the most frequent complaint was related to an hepatic and pancreatic insufficiency. The author believes that influenza is a determining factor in causing temporary hepatic and pancreatic insufficiency, which in turn causes acidosis. He considers the relation between influenza and acetonemia in children the same as that between influenza and infantile diabetes. In his cases insulin therapy, either by itself or associated with the administration of dextrose solution and a diet rich in carbohydrates, produced a favorable evolution and recovery.

Semana Médica, Buenos Aires

36: 661-736 (Sept. 5) 1929

Tuberculous Cavern of Whole Lung: Differential Diagnosis Between Cavern of Lung and Pneumothorax. R. F. Vaccarezza.—p. 668.
Problem of Criminal Abortion in Russia. M. L. Pérez.—p. 682.
Splenectomy in Third Stage of Banti's Disease. A. Navarro.—p. 685.
*Roentgen Therapy of Plantar Warts. M. Miranda Gallino.—p. 689.
Fractures of Humerus: Immobilization of Arm in Abduction with Plastered Cardboard Splints. T. Gioia.—p. 691.
Myeloplaxoma of Tibia: Resection: Autotransplantation of Fibula. I. Pirini and R. C. Ferrari.—p. 696.
Gastrotonometry in Diagnosis and Treatment of Gastric Conditions. A. Maggi.—p. 700.
Congenital Hypertrophy of Neck of Bladder. J. Salleras and G. Vilar.—p. 707.
Sarcomatoid Actinomycosis of Lower Extremity. C. Seminario and E. R. Gaviña Alvarado.—p. 708.
Multiple Zosteriform Cutaneous Lymphangio-Endotheliomas. A. M. Ratto and F. F. Gunche.—p. 714.
Gumma of Testis. L. D. Arrues and P. di Lella.—p. 719.
Fracture of Cuboid Bone. O. R. Marottoli.—p. 721.

Roentgen Therapy of Plantar Warts.—Ten patients, aged from 22 to 54, with plantar warts, treated with roentgen rays by Miranda Gallino, made a complete recovery. The author says that his series is too small to justify the conclusion that all cases of plantar warts should be cured by this treatment, but his good results support the optimistic opinions concerning this treatment. All patients but one received one or two treatments; in one patient three treatments were necessary. Roentgen irradiation, when judiciously used, is harmless and it should be the treatment of choice in plantar warts.

Archiv für Schiffs- und Tropen-Hygiene, etc., Leipzig

33: 455-504 (Sept.) 1929

Treatment of Leprosy. A. Paldrock.—p. 455.
*Enlargement of Spleen in Malaria. K. E. Surbek.—p. 461.
Relation Between Malaria and Gonorrhea, Syphilis and Neurosyphilis. M. Rosenberg.—p. 463.
Treatment of Colitis. L. F. Burowa.—p. 467.
Case of Amebiasis Observed at Padua. G. Salvioli.—p. 472.
Relation Between Cercaria Vitrina and Dicrocoelium Lanceatum. H. Vogel.—p. 474.

Frequency of Enlargement of Spleen in Various Forms of Malaria.—In a study of adult hospital patients, Surbek noted a marked difference in the frequency with which enlargement of the spleen could be demonstrated clinically in tertian malaria and in tropical malaria. In tertian malaria the spleen was palpable in 64 per cent of the cases, whereas in tropical it was palpable in only 30 per cent of the cases. As an important practical consequence of the study, he makes the postulate that in regions infected with tropical malaria the plasmodium index should always be determined regardless of the result of the determination of the spleen index.

Archiv für Verdauungs-Krankheiten, Berlin

46: 1-128 (Aug.) 1929

*Physiologic Effects of Infusions of Roasted Cereals and Chicory Root on Functioning of Gastro-Intestinal Tract. A. Bickel.—p. 1.
Superposition of Gastric Stimuli. P. Mahler and Z. Stary.—p. 13.
Chronic Pancreatitis. M. S. Rawitsch.—p. 35.
Diagnostic Administration of Alkali in Peptic Ulcer. K. Glaessner and H. Wittgenstein.—p. 48.
Functional Examination of Pancreas. W. S. Simnitzky and M. G. Mamisch.—p. 50.
Abortive Cure of Ascaris Infestation. Gockel.—p. 63.
Influence of Decomposition Products of Proteins on Secretion of Gastric Juice. A. Bickel.—p. 70.
*Treatment of Diseases of Intestine by Means of Buffer Solutions. W. N. Smotroff, J. A. Hellbird and S. M. Hodschamiroff.—p. 80.
Gout of Vertebral Column. E. Lyon.—p. 88.
*Diagnosis of Infestation with Intestinal Worms. S. S. Chalfen.—p. 96.

Physiologic Effects of Infusions of Roasted Cereals and Chicory Root on Functioning of Gastro-Intestinal Tract.—In experiments on dogs with a Pavlov stomach, Bickel noted that coffee substitutes such as roasted cereals and roasted chicory root have, at the concentration at which their infusions are usually drunk, a weak stimulant action on the secretion of gastric juice. This excitosecretory action is produced chiefly as a nervous reflex. Infusions of roasted cereals and chicory root contain substances also whose action on the glands of the stomach and intestine resembles the action of secretin; their action, however, is so weak that it can be demonstrated only by intravenous injection. Roasted cereals contain, just as does roasted coffee (with or without caffeine), a substance that increases the tonus of the smooth muscle of the intestine. Roasted chicory root, on the contrary, does not appreciably increase the tonus of the smooth muscles of the intestine; in fact, it contains substances which inhibit the action of infusions of roasted coffee or roasted cereals.

Treatment of Diseases of Intestine by Means of Buffer Solutions.—Smotroff et al. state that in the treatment of various diseases of the intestine (spastic colitis, ulcerative colitis and enterocolitis) they have noted marked improvement in the subjective and objective symptoms following the administration of buffer solutions. They use freshly made solutions containing a primary and a secondary phosphate; they inject one solution (with a p_H of from 6.6 to 6.2) transduodenally and one solution (with a p_H of 8.04) rectally. The first solution is made by mixing $\frac{1}{15}$ molar solution of secondary sodium phosphate and $\frac{1}{15}$ molar solution of primary potassium phosphate in the proportion of 2 cc. of the former and 8 cc. of the latter; the second solution is made by mixing a $\frac{1}{15}$ molar solution of primary potassium phosphate with a $\frac{1}{15}$ molar solution of secondary sodium phosphate in the proportion of 0.5 cc. of the former and 9.5 cc. of the latter. Under this form of treatment the reaction and bacterial flora of the stools soon become normal.

Diagnosis of Infestation with Intestinal Worms.—For the diagnosis of infestation with intestinal worms, particularly *Lamblia intestinalis*, Chalfen recommends examination of the contents of the duodenum.

Deutsche medizinische Wochenschrift, Berlin

55: 1535-1574 (Sept. 13) 1929

*Immunization Against Tuberculosis in Cattle by Means of Tubercle Bacilli of Low Virulence. Uhlenhuth, A. Müller and K. Hillenbrandt.—p. 1535.
Narcotic Action of Tribromethanol. Eichholtz.—p. 1537.
Diagnosis of Displacements of Uterus and of Other Genitalia. Benthin.—p. 1538. C'td.
Evidence of Changes in Clinical Aspects and in Infectiousness of Measles. R. Fischl.—p. 1540.
Experimental Study of Surgical Treatment in Disturbances of Heart. W. Felix.—p. 1541.
Psychotherapy and Hypertension. J. H. Schultz.—p. 1542.
Methods and Results in Encephalography. B. Badt.—p. 1543. C'cn.
Action of Thallium on Sympathetic-Endocrine System. A. Buschke.—p. 1546.
Value of Irradiated Milk in Prophylaxis of Rickets. P. Bamberger.—p. 1547.
Lipoid Nephrosis: A Metabolic Disease. O. Diebold.—p. 1550.

Diagnosis of Tumors of Spinal Cord. M. Nonne.—p. 1553.
Diathermy Chain Electrode. R. Sommer.—p. 1553.
Fish Bone as Cause of Perforation of Intestine. J. Fürstenau.—p. 1554.
Heredity and Nevi. Leven.—p. 1554.

Immunization Against Tuberculosis in Cattle by Means of Tubercle Bacilli of Low Virulence.—Uhlenhuth et al. made experiments on cattle with B C G culture and with Tb 18 culture (Uhlenhuth). The ages of the calves varied between 4 and 6 months. In order to demonstrate that they were free from a tuberculous infection they were subjected to a tuberculin test. One animal that gave a positive reaction was replaced by another one. The twenty-four calves were divided into four groups of six each. The ones belonging to the first group were vaccinated with 100 mg. of B C G culture in a suspension of 10 cc. The second group received subcutaneous injections of 100 mg. of the Tb 18 culture. These bacilli had been taken from tuberculous cattle in 1902 and since then had been propagated in artificial culture mediums. The third group of calves were given intraperitoneal injections of 1 Gm. of the Tb 18 culture. The animals belonging to the fourth group were used as controls and were not vaccinated. Later, all twenty-four calves were exposed to infection by bringing them into contact with three tuberculous cows. The result was that after ten months all the control animals had contracted tuberculosis. Of the six animals that had been vaccinated with B C G, two were not infected. The conditions were the same in the two groups that had received either subcutaneous or intraperitoneal injections of Tb 18. Whether the immunity of these animals was the result of the vaccination is questionable. The authors assume that these calves probably had a natural power of resistance. The experiments demonstrate also that Calmette's B C G culture is not more effective for immunization than the Tb 18 culture. The authors come to the conclusion that as yet there is not an efficient method for immunizing cattle against tuberculosis. Additional experiments must be conducted to determine whether peroral immunization of new-born calves will give better results.

Klinische Wochenschrift, Berlin

8: 1697-1744 (Sept. 10) 1929

Symptomatology and Treatment of Preexophthalmic Goiter. H. Zondek and H. W. Bansi.—p. 1697.
Treatment of Diabetes Insipidus with Special Fraction from Posterior Lobe of Hypophysis. S. Isaac and R. Siegel.—p. 1700.
*Changes in Composition of Blood Serum in Endocarditis Lenta. H. Kürten.—p. 1704.
Influence of Epinephrine on Assimilation of Galactose by Liver. J. Blöch.—p. 1707.
Exchange Processes Between Blood and Tissues: Difference in Sodium Chloride Content of Blood from Capillaries and from Veins. G. Dell' Acqua.—p. 1709.
Numerical Distribution of Erythrocytes and Leukocytes in Peripheral Blood. J. Reichel and G. Monasterio.—p. 1712.
Capacity for Specific Reaction of Skin in Experimental Hypersusceptibility to Arsphenamine. E. Nathan, A. Munk and H. Grundmann.—p. 1714.
Value of Roentgen Irradiation of Hypophysis in Treatment of Menopausal Disturbances. B. Steinhardt.—p. 1717.
Hormone of Anterior Lobe of Hypophysis: Its Influence on Sexual Glands. P. Botschkareff.—p. 1718.
Evidence That Blood Serum Reactions Following Serotherapy Are of No Diagnostic Value. H. Deicher.—p. 1718.
Influence of Radium Irradiation on Eudorina Elegans. L. Halberstaedter and A. Luntz.—p. 1719.
Rôle of Epinephrine and of Thyroid in Regulation of Carbohydrate and of Fat Constituents of Blood. D. Alpern, L. Tutkewitsch and W. Besuglow.—p. 1719.

Changes in Composition of Blood Serum in Endocarditis Lenta.—It is pointed out by Kürten that although the clinical aspects of endocarditis lenta are sufficiently known, its diagnosis is still difficult. A diagnosis which is based on the specific etiology of this disease is almost impossible, as great difficulties exist in demonstrating the presence of *Streptococcus viridans* in the patient's blood or in the urine, and also because there are still doubts whether *Streptococcus viridans* is always the pathogenic factor in this disease. Some authorities think that it may be caused by other micro-organisms such as influenza bacilli, pneumococci or gonococci. Because it is difficult to detect specific changes, attempts have been made to find other characteristic symptoms. The author reports his observations in thirty-five cases of endocarditis lenta. In thirty-three cases he observed that the serum from such patients jellied when 2 drops of a solution of formaldehyde were added to 1 cc. of serum. When normal serums or serums from patients with other diseases were subjected to this test, they did not give the reaction. The author determined the globulin and the albumin content of the serum in endocarditis lenta and he detected a relative and an absolute increase in globulin. He asserts that this increase in the globulin content causes the serum to jelly after it has been mixed with the formaldehyde solution. Another characteristic symptom of the serum in endocarditis lenta, when it was brought in contact with the dye naphthol yellow, was that the serums from patients with endocarditis lenta absorbed the dye to a lesser degree than normal serums. This phenomenon is likewise due to the increased content in globulin, because globulin does not combine with naphthol yellow.

Medizinische Klinik, Berlin

25: 1457-1492 (Sept. 20) 1929

Clinical Aspects of Hypophyseal Disturbances. O. Marburg.—p. 1457.
*Pathogenesis, Clinical Aspects and Treatment of Lead Poisoning. S. Litzner.—p. 1462.
*Congenital Permanent Atrioventricular Heart Block and Subaortal Defect of Septum. K. Brandenburg.—p. 1464.
*Treatment of Pulmonary Abscess. A. Wehmeyer.—p. 1465.
*Portal of Entry in Congenital Tuberculosis. R. Grosser.—p. 1467.
*Confinement and Lactation in a Woman with Severe Diabetes Mellitus. D. Merkler.—p. 1468.
Sugar Content of Blood in Suppurative Inflammations of Skin. K. Nissle.—p. 1469.
Removal of Foreign Bodies from Skin and from Subcutaneous Connective Tissue. Hayward.—p. 1472. C'tn.

Pathogenesis, Clinical Aspects and Treatment of Lead Poisoning.—Litzner asserts that lead is the cause of the majority of industrial diseases. The lead is absorbed by the skin, the gastro-intestinal tract and the respiratory organs. The quantity that is absorbed by the skin is so small that it may be disregarded. The largest amounts are absorbed in the upper portions of the small intestine. Investigations on the distribution of the lead in the organism and on the various modes of excretion showed that the vascular system, liver, kidney and intestine are affected first in lead poisoning. The author further discusses the clinical aspects of this condition. The injurious effects on the vessels are either of a functional or of an organic nature. The coloring of the skin in lead poisoning is due to a contraction of the cutaneous vessels. Lead amaurosis is a result of vascular spasms in the eye or in the brain. The increased blood pressure in lead colic is due to generalized vascular spasm. Other forms of lead poisoning are arthralgia saturnism, gangrene of the lower extremities and lead encephalopathy. The disturbances of the liver, kidney and intestinal tract that are caused by lead are likewise discussed. Concerning the treatment of acute lead poisoning, the author states that the first object should be to remove the lead from the circulating blood. Since it is not possible to eliminate all the lead, its deposition in the bones should be stimulated. In order to effect this, the patient should receive large quantities of milk and calcium. The diet should be alkaline and should provide green vegetables, fruits and eggs. Medicaments that effect the elimination of lead, such as potassium iodide, are contraindicated because they counteract the reduction of the lead content in the blood. Only after the acute symptoms have disappeared should attempts be made to remove the lead from the body. Instead of an alkaline diet the patient should now receive a sour diet containing large quantities of meat, liver and potatoes; also tea and coffee. For medication the author recommends either one of the following drugs: a solution of phosphoric acid, ammonium chloride or potassium iodide.

Congenital Permanent Atrioventricular Heart Block and Subaortal Defect of Septum.—Brandenburg reports the case of a boy, aged 4, in whom he detected a permanent atrioventricular heart block. The author thinks that the disturbance in the conduction was congenital. As the cause of the loud systolic heart sound, a congenital defect of the ventricular septum is assumed. The disturbance in the conduction indicates that the anlage of the atrioventricular bundle has been disturbed by the defect in the ventricular septum, and this in turn would indicate a subaortal defect of the septum.

Treatment of Pulmonary Abscess.—Wehmeyer asserts that in the surgical therapy of pulmonary abscesses the mor-

tality rate is high. He describes four cases of abscess of the lung. In three instances the patient's general condition contraindicated surgical treatment. The author employed artificial pneumothorax. Three of the four patients recovered. The other patient showed a temporary improvement, but he died as the result of an hemoptysis. The author thinks that the pneumothorax is of no value in cases in which there is no communication with a bronchus. He points out that although surgical treatment is necessary in some cases, artificial pneumothorax is helpful in many cases of pulmonary abscess.

Portal of Entry in Congenital Tuberculosis.—Grosser points out that the existence of a congenital form of tuberculosis has been proved. Infants who, immediately after division of the umbilical cord, had been separated from tuberculous mothers died of tuberculosis from twenty-six to sixty-eight days afterward. The author gives a detailed report of one case. In this instance the primary lesion was located in the intestine. He thinks that the child had contracted tuberculosis intra partum by swallowing liquor amnii. The author gives a classification of the various forms of congenital tuberculosis: 1. The fetus may have been infected by way of the placenta. In these cases death usually occurs shortly after birth. The primary complex is found either in the portal vein or in the lung. 2. To the second group belong those that are infected intra partum. They die during the first six months of life. The infection may be placental. In these cases the primary lesion is either in the portal vein or in the lung. The infection may also have been caused by either the aspiration or the swallowing of liquor amnii. In cases of aspiration of liquor amnii, the primary complex is found either in the lung or in the ear. If the swallowing of liquor amnii has caused the infection, the primary lesion is in the intestine.

Confinement and Lactation in a Woman with Severe Diabetes Mellitus.—Merkler reports the case of a woman with diabetes mellitus. For several years she had received hospital and ambulatory treatment for diabetes mellitus. Only rarely was the patient entirely free from sugar. In spite of the fact that conception occurs but rarely in women with diabetes mellitus, this patient was pregnant four times. The first two pregnancies ended in spontaneous abortions. The third time the gravidity was interrupted. Because the patient desired a child, the fourth pregnancy was allowed to go to term. In order to avoid hypoglycemic coma, he did not attempt to make the patient entirely free from sugar. The dietary regulations were not strict. Insulin was given in sufficient quantities to keep the urine free from acetone, but there always existed a slight glycosuria. The pregnancy terminated in the spontaneous birth of a living child. After confinement the patient fell into a hypoglycemic coma. Simultaneously a disturbance of consciousness was noted, which was followed by retrograde amnesia. The patient was able to nurse the child. Tests proved that the infant was free from glycosuria. The author concludes that, with the aid of a suitable insulin therapy, confinement and lactation can be made possible without injurious effects either on the mother or on the child.

Münchener medizinische Wochenschrift, Munich

76: 1537-1578 (Sept. 13) 1929

Absence of Antitoxin in Blood of Patients Following Spontaneous Recovery from Diphtheria. F. Hamburger and J. Siegl.—p. 1537.
Tuberculosis Problem in Hungary: Effectiveness of Friedmann Treatment. E. Szalai.—p. 1538.
*Early Diagnosis of Appendicitis in Children. E. Flusser.—p. 1542.
*Neuralgia and Myalgia Caused by Chilling During Sleep: Its Prevention. E. Beyer.—p. 1545.
State of Tension in Spinal Cord in Lordosis and in Kyphosis: Its Significance for Treatment of Acute Poliomyelitis. F. Becker.—p. 1547.
Table Suitable for Both Surgical and Orthopedic Operations. W. Engelhard.—p. 1548.
*Cause and Treatment of Metatarsalgia. K. W. Fischer.—p. 1549.
Treatment in Loose and in Fixed Flatfoot. G. Hohmann.—p. 1550.
Simple Methods for Nonsurgical Correction of Deformities After Fracture and Osteotomy. P. Pitzen.—p. 1551. C'td.
Cinematography of Heart: Its Diagnostic Significance. P. Stumpf.—p. 1555.
Systematic Sports and Respiratory Exercises as Means to Increase Vitality of Patients with Scoliosis. R. Hass.—p. 1559.
Number of Feedings for Infants. W. Stoeltzner.—p. 1561.
Histamine Test and Endoscopic Picture of Gastric Mucous Membrane in Achylia. N. Henning.—p. 1561.
*Method for Palpation of Spleen. H. Schotter.—p. 1562.
*Abdominal Pains Simulating Appendicitis. J. Rosenbaum.—p. 1563.
Value of Plaster-of-Paris Cast and of Operations in Rheumatic Arthritis. O. Vulpius.—p. 1564.
Dietary Treatment of Tuberculosis. H. Ahringsmann.—p. 1565.

Early Diagnosis of Appendicitis in Children.—Flusser points out that in children who are operated on for acute appendicitis, it may sometimes be observed that the appendix shows the signs not only of an acute appendicitis but also of a chronic inflammation and adhesions. Such conditions indicate that the child has suffered previously from appendicitis, but that the symptoms of the disease had not been recognized. In order to detect signs which, at the time of the first attacks of appendicitis, had not been recognized as indications of this disease, the author studied the previous history of such patients. He found that aversion to eating and loss of appetite are nearly always mentioned in the anamnesis of such children. Another sign is rectal tenesmus. The child takes the pains that are caused by the inflamed appendix as an urge for defecation, but the straining is ineffective. Vomiting may likewise be a sign of appendicitis. If a child limps with the right leg without any signs of osteopathy, an inflammation of the appendix may be thought of. An anomaly in urination, such as too frequent or suppressed urination, and the urge to urinate without the voiding of urine, is nearly always a sure indication of appendicitis. The author further discusses the difficulties in the diagnosis of appendicitis in children. A child is not only less sensitive to these pains but it is often not capable of localizing the pain correctly. Rigidity of the abdominal wall often cannot be recognized in children because of crying, and meteorism is sometimes entirely absent. The differential diagnosis is particularly difficult in cases of influenza and in other infectious diseases, and umbilical colic often simulates appendicitis. In the conclusion the author states that in appendicitis in children there is no pathognomonic symptom on which the diagnosis can be based. Incorrect diagnoses may be avoided by careful examination of the region of the appendix.

Neuralgia and Myalgia Caused by Chilling During Sleep: Its Prevention.—Beyer asserts that neuralgia and myalgia are most easily contracted when the body is at rest, especially during sleep. The blood pressure, the pulse rate and the oxygen intake are considerably reduced during sleep. If a person is not sufficiently protected against drafts or cold or if a part of the body becomes uncovered, the chilling usually leads to neuralgia or myalgia. To prevent these conditions care should be taken that the sleeping room is well ventilated. Drafts are to be avoided. The authors points out that nightdresses often do not cover the body sufficiently. Especially during the colder seasons, the bedcovers as well as the nightdresses should be heavy enough to prevent chilling.

Cause and Treatment of Metatarsalgia.—According to Fischer, metatarsalgia is the result of the lowering of the transverse arch. As causes of this lowering he considers (1) the wearing of a high heel, which throws the largest part of the weight of the body to the front part of the foot; (2) walking on the inner border of the foot, and (3) atrophy of the plantar muscles which is caused by inactivity. After metatarsalgia has once developed, the patient, in order to avoid pains, usually bends the foot either outward or inward, and thus wrong walking habits usually lead to other deformities of the foot. It is therefore of the greatest importance to counteract the metatarsalgia in its earliest stages. The author describes a flexible rubber support that is placed in the shoe. Its advantages are enumerated as follows: 1. It takes the weight of the body off the heads of the second and third metatarsal bones. 2. The front of the foot is elevated and this indirectly lowers the heel. 3. The support prevents the passive dorsal flexion of the toes, and it stimulates the action of the flexor longus digitorum. 4. This support also prevents walking on the inner border of the foot and assists in normal walking.

Method for Palpation of Spleen.—Schotter enumerates the difficulties which are usually encountered when palpation of the spleen is attempted. He names rigidity of the abdominal wall, flatulence of the intestine, the thickness of the layers of fatty tissue and failure on the part of the patient to breathe correctly. The author then describes a method that he has employed successfully for more than fifteen years. His description is illustrated by three sketches. The advantages of this

method are summed up as follows: 1. The abdominal wall relaxes on the left side. 2. The palpating hand is set on only once. 3. The layers of fatty tissue and distended intestines go downward, that is, toward the right side. 4. If the spleen is enlarged and heavier, it falls forward. 5. The patient's attention is drawn away from the palpation itself and is directed to the physician's left hand, which pulls at the patient's arm. 6. The breathing is of minor significance, and the patient is passive during the entire examination.

Abdominal Pains Simulating Appendicitis.—Rosenbaum asserts that he observed a number of patients with high fever and with intense abdominal pains. Careful observation revealed that the pains were not due to disease conditions of internal organs. It was found that they were at the points where certain nerves, especially the intercostal, the iliohypogastric and the ilio-inguinal, send their rami to the surface. Such sensitive regions are on the edge of the abdominal rectus, over the lower ribs and in the sternal region. In order to determine whether the pains are localized in these nerves or whether internal organs are affected, the physician should have the patient raise himself out of the lying position without the aid of his arms. Frequently McBurney's point is painful on pressure. However, if the physician avoids touching the ends of the iliohypogastric nerve, on the outer border of the abdominal rectus, he can press deeply without the patient having any painful sensation. This proves that the pain is localized only in the nerve, and that the appendix is not affected. Such pains often occur in patients with influenza and in other infectious diseases. Occasionally they may be chronic. These neuritic or neuralgic processes should be counteracted by moist and warm applications, by inunction with salicylic acid ointments or by diathermy. To differentiate these symptoms from the true signs of appendicitis is of the greatest significance in the diagnosis of appendicitis.

Wiener klinische Wochenschrift, Vienna

42: 1181-1212 (Sept. 12) 1929

Pathologic Changes in Injuries Caused by Electricity. S. Jellinek.—p. 1181.
Therapeutic Use of Human Milk. A. Reuss.—p. 1183.
Correlation Between Acute Aplastic Anemia, Acute Aleukemic Lymphadenosis and Agranulocytosis. L. Bickel.—p. 1186.
*Renal Insufficiency as Cause of Diabetic Coma. E. Róth.—p. 1190.
Complete Closure of Anastomosis as Result of Plastic Peritonitis. H. Biesenberger.—p. 1192.
*Treatment of Psoriasis with Extract from Psoriatic Cutaneous Scales. V. Mihajlović.—p. 1192.
Value of Solution of Secondary Butylbrompropenylbarbituric Acid for Narcosis in Rhinolaryngologic Surgery. F. J. Mayer.—p. 1194.
Activation of Latent Syphilis by Roentgen Rays and by Antisyphilitic Treatment. F. Fischl.—p. 1197.
After-Treatment in Fractures. C. Ewald.—p. 1198.
*Obstetric Trauma of Cranium as Cause of Death. H. Heidler.—p. 1199.
Physical, Medicinal and Operative Treatment in Arthritis Deformans. J. Hass.—p. 1200.
Symptomatology of Hydrophobia. F. Schweinburg.—p. 1201.

Renal Insufficiency as Cause of Diabetic Coma.—Róth reports the case of a patient, aged 20, who showed symptoms of diabetes. The disease began with great thirst. The patient drank daily from 5 to 6 liters of water and eliminated a corresponding amount of urine. He also had gastric disturbances and his weight decreased rapidly. His physician gave him several insulin injections. When the patient arrived at the hospital, a test of the urine revealed that it contained sugar. However, acetone and diacetic acid could not be detected. The first day the patient was given a mixed diet. After that the urine test gave nearly the same results. On the following day the patient's diet was restricted. He received 85 Gm. of proteins, 65 Gm. of carbohydrates and 130 Gm. of fats. Shortly after the noon meal he developed diabetic coma. Kussmaul's respiration set in, and an acetone odor was noted. The patient vomited continually and the abdomen was sensitive to pressure. The urine now contained enormous quantities of acetone and of diacetic acid; also sugar, small quantities of protein, coma casts and leukocytes. The patient was given 70 units of insulin and a large quantity of fluids, and one and one-half hours later he recovered. It is not likely that the acetone bodies developed suddenly, and the elimination of such a large quantity of them proves that the coma was preceded by a renal insufficiency. The author points out that renal insufficiency is often observed after diabetic coma. In the case reported, however, it existed before and it ended with the development of the coma. Another factor that marks this case as an unusual one is the fact that the kidney failed only in the elimination of the acetone bodies; otherwise it functioned normally. The pathogenesis of this condition cannot be explained completely. However, the author assumes that a disturbance in the permeability of certain parts of the kidney is the cause of this condition.

Treatment of Psoriasis with Extract from Psoriatic Cutaneous Scales.—In the treatment of ten patients with psoriasis, Mihajlović employed an extract that was prepared by digesting psoriatic cutaneous scales with pepsin and trypsin. His observations are summed up as follows: The subcutaneous injection of this preparation causes neither local nor general reactions. In the beginning of this treatment the skin itches and the scales peal more quickly and more easily. In the course of this treatment the punctate hemorrhages that otherwise develop after the removal of the scales do not appear. The painfulness of the joints disappears. In nearly all patients who underwent this injection treatment, leukoderma developed. The leukodermic areas occur in the same place and have the same shape as the psoriatic lesions. After the treatment is begun, the lesions on the scalp, on the chest and on the abdomen are usually the first ones to disappear, whereas those on the knees and the elbows are generally more refractory. The injections are given subcutaneously, in quantities of from 1 to 10 cc., and after intervals of from one to five days. The extract may be prepared either from the patient's own scales or from those of other patients. In most instances better results were obtained with analogous extracts. This method of therapy does not always prevent the occurrence of relapses. However, the author thinks that the favorable results which were gained with this treatment prove that it deserves to be further investigated.

Obstetric Trauma of Cranium as Cause of Death.—Heidler points out that formerly most fatalities in the newborn were traced to asphyxia. He reports four cases in which the necropsy revealed that death was the result of intracranial lesions. These observations as well as former investigations convinced the author that about one half of all deaths in the new-born are caused by intracranial lesions. To reduce the frequency of this form of obstetric trauma, pressure on the head of the fetus should be avoided as much as possible. The author advocates cesarean section in all cases of narrow pelvis. Forceps operations, version and extraction have to be performed with great care. He also asserts that confinement in a hospital is to be preferred to confinement in the home.

Zeitschrift für Urologie, Leipzig

23: 753-832, 1929

Therapy of Perineal Hypospadias. A. Schüppel.—p. 753.
Sarcoma of Prostate. I. S. Tjomkin.—p. 762.
Cystoscope Providing Obtuse Angle Vision. O. Hennig.—p. 766.
*Formation of Urinary Calculi in Tuberculosis of Urogenital Tract. J. Minder.—p. 767.
Calculus Formed Around a Hairpin in Bladder. E. Dózsa.—p. 776.
*Sex Predisposition to Diseases of Urinary Tract. H. Günther.—p. 778.

Formation of Urinary Calculi in Tuberculosis of Urogenital Tract.—In Minder's patient, a man, aged 32, symptoms of dysuria had developed six years previously. One year later tuberculosis of the left kidney was found, but operation was not performed as the right kidney was also considered to be involved. The symptoms progressed, however, and after renewed examination two years later (the right kidney having been shown to be normal) resection of the left kidney and the left testis was performed. Recovery was slow, but the patient gained considerably in weight. His bladder trouble persisted, however, and necessitated continuous treatment. About two years prior to the second operation, an extensive hemorrhage from the bladder occurred, caused by an ulceration, which was treated by thermocoagulation. From that time on the urine was cloudy and contained much mucus, and calculi of varied size were eliminated daily. One week before admittance to the clinic, a large calculus became impacted in the urethra, resisting all attempts at removal. The difficulty of introducing a catheter was finally overcome. When, after five days, the temperature did not return to normal, operative removal of the stone was effected. The entire bladder was filled with a crumbly substance adherent to the mucosa; microscopic examination revealed extensive deposition of calcium in fibrous tissue. On the basis of his clinical experience, Minder concludes that

the interrelation of tuberculosis of the urogenital tract and the formation of calculi is to be accepted with reservation. It is evident only so far as every infection or inflammation may influence the development of another disease.

Sex Predisposition to Diseases of Urinary Tract.—On the basis of a statistical review of the literature available to Günther, he makes the following statements: Malformations of the kidneys are more frequent in men than in women. On the other hand, congenital dystopia of the kidneys and nephroptosis are found more often in women than in men. In acute glomerulonephritis the predisposition of the male sex is evident. A variation in the incidence of uremia was not noted. Nephrosis appears more frequent in women; the arteriosclerotic contracted kidney, on the other hand, is more often found in men. Young girls are subject to lordotic albuminuria. As regards tuberculosis of the kidneys, there is a discrepancy in the reports of various authors. On the whole it may be stated that the distribution is fairly equal between the sexes. Secondary involvement of the urinary tract as a complication of tuberculosis of the genitalia is seen more frequently in the male sex. Also tumors of the kidney are more frequent in men. Hydronephrosis, on the other hand, is more often seen in women. The reason for the frequent occurrence of paranephritis in men may be given by the frequency of trauma in the male. Urolithiasis is also a characteristic disease in the male, as are calculi of the urinary bladder. This observation of sex predisposition to the formation of calculi was confirmed by experiments in rats on the relation of vitamin A deficiency to the formation of urinary calculi. It was shown that male rats were more susceptible than female animals. Cystitis and pyelitis predominate in the female. Enuresis again is found chiefly in boys; signs of incontinence of urine are, however, frequent in women, especially those who have borne children, in the form of incontinence occurring when the patient laughs. Pollakiuria is of frequent occurrence in women, primary carcinoma in men, sarcoma of the urinary bladder and malacoplakia vesicae in women. However, Günther states that the establishment of rules on the basis of his study is not possible and therefore he advises further investigation.

Zentralblatt für Chirurgie, Leipzig

56: 2369-2432 (Sept. 21) 1929

Diagnosis of Granuloma with Foreign Body Nucleus. J. G. Knoflach.—p. 2370.
Postoperative Atony of Stomach. O. Orth.—p. 2375.
Death from Pernocton Anesthesia. G. Eichelter.—p. 2378.
Composition and Action of Pantopon-Magnesium Sulphate. Von Brandis and H. Killian.—p. 2380.
*Use of Double Skin Flap in Restoration of Lip Defects. F. von Czeyda-Pommersheim.—p. 2381.
New Ligature Carrier. J. Schoemaker.—p. 2383.
New Tongue Retractor for Use in General Anesthesia. I. Lang.—p. 2384.
Value of Kidney Function Tests. H. Köhler.—p. 2386.
*New Method of Tendon Suture. G. Tschalenko.—p. 2388.

Double Skin Flap for Cheiloplasty.—In appropriate cases of defects of the lip, von Czeyda-Pommersheim makes use of a procedure which he believes obviates shrinking of the flap. He raises two full depth skin flaps from the outer surface of the upper arm in such a manner that the raw surfaces of the flaps can be placed in apposition. The flaps are sutured together at the edges, one of which will serve later as the covering for the free margin of the lip. After the flaps have healed, they are transplanted to the lip by the so-called Italian method. Good results are claimed for the method.

New Technic for Tendon Suture.—The method employed by Tschalenko is a combination of the Lange and Frisch methods, with a slight modification. The first sutures are placed as in the Lange method, except that they diverge toward the periphery of the nerve. After this has been done with both ends, the distal and the proximal, they are drawn together and held in apposition until the sutures are tied. A second suture enters the nerve and crosses the meeting point of the ends of the nerve, like a figure-of-eight suture. A similar suture is placed on the opposite side of the nerve. The technic is simple, rapid and effective in the author's experience.

56: 2433-2496 (Sept. 28) 1929

*Operation for Hallux Valgus. M. Brandes.—p. 2434.
Partial Resection of First Phalanx of Great Toe in Hallux Valgus. K. Lindemann.—p. 2441.
Technic of Local Anesthesia for Operations on Abdominal Wall. A. W. Wischnewsky.—p. 2444.
Diseases of Liver and Indications for Anesthesia. H. Achelis.—p. 2454.
Treatment of Papilloma of Anus. K. Volkmann.—p. 2456.
Chromium Plated Surgical Instruments to Prevent Rusting. K. Wagner.—p. 2457.
Curved Metal Finger Splint. E. Glass.—p. 2459.
Drainage Tube Lost in Hepatic Duct. E. Pólya.—p. 2460.

Operation for Hallux Valgus.—Brandes relates his experiences with resection of the proximal two thirds of the first phalanx of the great toe in cases of hallux valgus, which he has done in more than 100 cases with good anatomic and functional result. The operation is performed under local anesthesia. None of the other structures are disturbed, except that the prominent portion of the inner side of the head of the first metatarsal is chiseled off. The proximal two thirds of the first phalanx of the great toe is removed completely. After the wound has been closed, the toe is put into slight plantar flexion to avoid foldings of the skin and skin necroses. The whole foot is put in plantar flexion and slight adduction, and a plaster-of-paris footplate is applied. Sutures are removed on the eighth day; all dressings by the eleventh day. By the fourteenth day the patient may be permitted to walk, but before he does, a light zinc oxide bandage is applied to the metatarsal region. Passive movements of the foot, hot foot baths, and massage are important factors of the after-treatment.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

73: 4463-4594 (Sept. 28) 1929

Vitamin A. L. K. Wolff.—p. 4465.
A Peculiar Bone Disease, with General and Neurologic Manifestations. E. K. Janzen and J. Goudsmit.—p. 4474.
*Use of So-Called Box Bandages. A. A. van der Kroon.—p. 4479.
Catalase and Its Action in Genesis of Diabetes Mellitus. J. H. Regenbogen.—p. 4483.
Chinese Remedies in Syphilis and Gonorrhea. P. H. van der Hoog.—p. 4501.

Use of Box Bandages.—Van der Kroon describes the remarkable effects of the use of his personally designed "box bandages." Applying the principle of open treatment of wounds, he removes the bottom of a box of suitable size. He bends the edges of the box into a shape corresponding to the form of the wound to be dressed. About the edges of the box thus bent into suitable shape he wraps absorbent cotton, over which a wrapping of hydrophil gauze is applied. The wound is cleansed and, if necessary, painted with silver nitrate. The adjacent skin is covered with zinc ointment, and then the box bandage is placed over the wound and fastened with strips of adhesive tape. A thin wrapping of hydrophil gauze is then applied over all to keep out the dust. Van der Kroon is convinced that in his cases the healing was greatly expedited by the use of the box bandage. The explanation may be found chiefly in the drying out of the wound, which is the most primitive and natural mode of reducing the extent of a wound surface. It is not improbable, also, that the constantly increasing concentration of the wound serum that results thereby exerts a favorable influence on the destruction of bacteria, which are present in every wound. Furthermore, changing the bandage does not cause a new irritation of the wound surface. In the granulation tissue, blood vessels are not torn loose and the newly formed epithelium remains unimpaired and closely attached to the base of the wound. Possibly the free admission of light and air has a favorable influence. In any event, a tight-fitting scab is promptly formed, and that is always the best possible wound covering. Van der Kroon admits that his observations may be regarded as evidence for the value of open treatment of wounds in certain cases.

Finska Läkaresällskapets Handlingar, Helsingfors

71: 569-659 (Aug.) 1929

*Epidemic Encephalitis and Multiple Sclerosis: Differential Diagnosis. H. Marcus.—p. 569.
Volume of Brain and Capacity of Cranium. E. Ehrnrooth.—p. 588.
*Bothriocephalus, Liver Therapy and Reticulocyte Reaction. F. Saltzman.—p. 600.
Spores of Bacteria. C. Nyberg.—p. 610.
*Regional Lymph Nodes in Cancer of Cervix. L. Leidenius.—p. 619.

Epidemic Encephalitis and Multiple Sclerosis: Differential Diagnosis.—In Marcus' patient, aged 18, with a history of general symptoms to be interpreted possibly equally well as

signs of epidemic encephalitis or of multiple sclerosis, temporary recovery was followed in six months by the onset of symptoms chiefly corresponding to those of epidemic encephalitis. Six months later there appeared symptoms of multiple sclerosis of atypical form, with sudden death from respiratory paralysis. Microscopic examination revealed in part degenerative foci suggesting multiple sclerosis, in part recent perivascular cell infiltration in the spinal cord and brain in complete agreement with epidemic encephalitis. The author was unable to decide whether both multiple sclerosis and epidemic encephalitis or disseminated encephalomyelitis were present in this unusual acute case, which he reports in detail.

Bothriocephalus, Liver Therapy and Reticulocyte Reaction.—Saltzman regards his observations as a preliminary orientation. The results of the reticulocyte reaction in patients with tapeworm, but not pernicious anemia, were not uniform. In patients with tapeworm and pernicious anemia the results showed that, after liver therapy, without the removal of the parasite, a typical marked reticulocyte reaction may be seen, with abrupt improvement in the blood picture agreeing with the results in cryptogenic anemia. Analogous results may follow the expulsion of the tapeworm. Tapeworm anemia seems more often to be resistant to liver therapy than does cryptogenic anemia.

Involvement of Regional Lymph Nodes in Cancer of Cervix.—Leidenius' material comprises twenty-one cases of cancer of the cervix operated on according to the so-called extended Wertheim method. Cancerous lymph nodes were found in six cases, or 28 per cent. Patients with metastases in the lymph nodes had had symptoms for an average of four and one-half years before the operation; those without metastases, for five years. In spite of the most radical treatment, the six died within two years from recurrence or metastases. In five of the six cases the tumor was of the infiltrative type. Of the fifteen without lymph node metastases, nine are well from two to three years after operation. In his opinion, microscopic examination of the original tumor does not establish whether or not metastases in the lymph nodes may be looked for but does give information which with some degree of probability points one way or the other. Microscopic examination of the noncancerous lymph nodes showed fatty degeneration in most cases, also changes most closely resembling those of simple hyperplastic lymphadenitis. Practically no normal lymph nodes were seen. The author believes that the changes are caused by the cancer toxins. He questions the advisability of extensive extirpation of the regional lymph nodes.

Hospitalstidende, Copenhagen

72: 841-852 (Aug. 8) 1929

*Treatment of Essential Thrombopenia with Liver Extract. S. A. Holbøll.—p. 841.
*Incarcerated Femoral Hernia in Boy, Aged Nine Years. K. K. Ortmann.—p. 847.

Treatment of Essential Thrombopenia with Liver Extract.—In Holbøll's case, treated only with liver extract, the subcutaneous hemorrhages ceased and the blood picture became normal during treatment. Six weeks later the patient was still well. The possibility of spontaneous remission is not rejected and the prognosis for essential thrombopenia may thus be better than hitherto supposed. A conservative attitude is advised toward the more radical forms of treatment, as splenectomy.

Incarcerated Femoral Hernia in Boy, Aged Nine Years.—Ortmann considers the hernia in his case as having originated on a traumatic basis and as having been promoted by the underweight of the child.

72: 853-868 (Aug. 15) 1929

*Changes in Spinal Fluid as Result of Brief Compression of Jugular Veins. A. V. Neel, H. Tómasson and O. Jacobsen.—p. 853.

Changes in Spinal Fluid as Result of Brief Compression of Jugular Veins.—Neel et al. found that compression of the jugular veins, if sufficiently strong, is after a certain time succeeded by a dilution of the spinal fluid, the albumin content being lowered. This dilution is believed to depend chiefly on the increased venous pressure. They therefore warn that, if puncture is not made directly after compression according to Queckenstedt, there is danger that the spinal fluid may show an albumin content lower than the real albumin content of the patient's spinal fluid.

72: 881-908 (Aug. 29) 1929

*Effect of Intravenous Injection of Insulin on Blood Sugar Curve in Normal Persons. A. Norgaard and T. E. Hess Thaysen.—p. 881.
*Sensitization of Rachitic Rats to Light. E. Rekling.—p. 899.

Effect of Intravenous Injection of Insulin on Blood Sugar Curve in Normal Persons.—After the intravenous injection of 12 international units of insulin in nine men and nine women with normal carbohydrate metabolism, Norgaard and Hess Thaysen found a typical blood curve. There was a sharp drop to the lowest blood sugar value, most often reached twenty-five minutes after the injection. The lowest blood sugar value observed was 20 mg. per hundred cubic centimeters. A rise in the curve then occurred during which the dextrose content of the blood reached, or almost reached, the value noted before the injection. The primary or more marked rise usually lasted from ten to twenty minutes, and the secondary rise from twenty-five to 110 minutes. In men the rise was steeper and the distinction between the primary and secondary rises more definite than in women. Curves made in the same person at different times were remarkably uniform. During the drop marked variations were seen between the dextrose content of the venous and the capillary blood; not until about thirty or thirty-five minutes after the end of the fall was there a constant greater dextrose content in the capillary blood than in the venous blood, the difference sometimes amounting to 25 mg. per hundred cubic centimeters.

Sensitization of Rachitic Rats to Light.—Rekling was unable by means of eosin, bengal rose, chlorophyll and hematoporphyrin to sensitize to light rachitic young rats or linseed oil so as to produce antirachitic qualities by irradiation of the animals or the oil with rays of wavelengths greater than 313 millimicrons.

Ugeskrift for Læger, Copenhagen

91: 769-788 (Sept. 12) 1929

Antithyroidin Tablets. T. Madsen.—p. 775.
Almèn's Test for Sugar in Urine. J. E. Holst.—p. 775.
*Immunization with Blood of Own Species. O. Thomsen.—p. 776.

Immunization in Man with Blood of Own Species of Different Types.—Thomsen's results seem to indicate that human blood of one type has no antigenic power in persons of another type and that it is on the whole doubtful whether the characteristics of the blood corpuscles on which differentiation of type is based are of antigenic nature. It appears probable, however, that blood of different types, perhaps also of the person's own type, can nonspecifically produce changes in the blood serum which aid hemolysis.

91: 789-816 (Sept. 19) 1929

Cutaneous Pathomimesis. C. Rasch.—p. 789.
*Radium Treatment of Angiomas. J. Nielsen.—p. 795.
Pyelo-Ureterocystography in Malformation of Urinary Tract in Child. J. Fabricius-Møller.—p. 802.
Diseases of Eye in Greenland. V. Hertz.—p. 805.

Radium Treatment of Angiomas.—Nielsen's material consists of 415 angiomas treated at the Copenhagen radium station and examined from one to fifteen years later. Most of the patients were children, 261 under one year. Of the 354 cavernous angiomas, cure was effected in 90 per cent; also in an additional 7 per cent with results more or less compromised by secondary effects, the doses having been stronger than elective. Of the fifty-five telangiectases, four of coin-size were cured; of the fifty-one extensive capillary angiomas, improvement was noted in only 40 per cent. The author believes that if the treatment was begun as early as possible (days or weeks) after birth, the results might be improved. In the six venous cirsoid angiomas there was improvement in only one. The fundamental principles of the method used are: always suberythemal, elective doses and never new treatment until the effect of the preceding treatment is surely past. The excellent cosmetic results are emphasized. The radiosensitivity of angiomas is greatest at birth. No disturbances of development were observed even in the very young. Except in small and superficial, mainly stationary angiomas, radium therapy must be considered the method of choice in the treatment of angiomas. In plane nevi, radium therapy is only partly successful.